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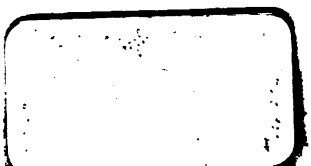
Per. G.A. Wilts 8° 62



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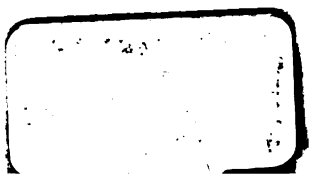

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SEVENTEENTH HALF-YEARLY

REPORT

OF THE

MARLBOROUGH COLLEGE

Natural History Society,

FOUNDED APRIL 9th, 1864,

FOR THE

HALF-YEAR,

ENDING MIDSUMMER, 1873.

"Tum mihi Naturæ libeat perdiscere mores:
Quis Deus hanc mundi temperet arte domum."

MARLBOROUGH
PRINTED BY C. PERKINS, TIMES OFFICE.
1873

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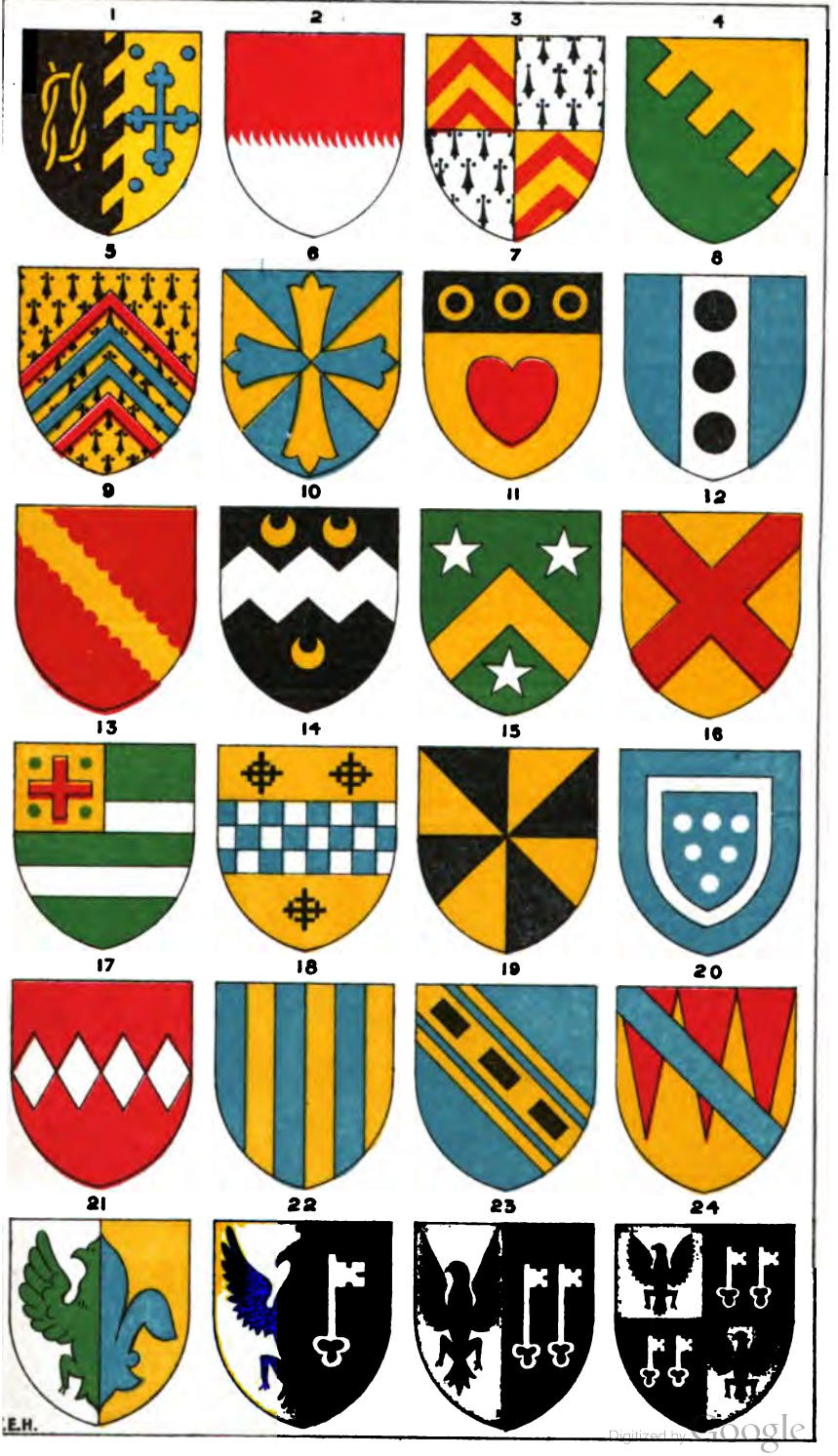

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PREFACE.

WITHOUT exactly saying that "Natural History does not flourish at Marlborough," we can safely say that it does not flourish in the upper part of the School. For some time past we have observed that members of the Society on entering the fifth form as a rule resign their membership, and now we have to announce that next term we shall have to work without a member drawn from either the VIth or Upper Vth forms. For many reasons this is to be deplored, but we can only hope that the comfort which has been held out to us—that the present members will feel themselves more responsible, and will therefore work harder—will prove not unfounded. Certainly we can say that very much work has been done by them, and we have had no reason to complain of the energy of some among them, as the following pages will shew; but still we cannot help wishing that we could have secured the aid of some of the upper members of the school in carrying on the affairs of the Society.

Another feature in the general character of the Society has also to be noticed, as its effects are visible in the following Report—viz., the absence of papers. It was found very difficult to get papers, except from a very few, and they very naturally, after a time, "struck work;" not that they turned idle, but that they felt that others ought to help in keeping up the interest of the meetings. It was, therefore, decided to cease having formal meetings, and to have instead meetings at which much more freedom could be enjoyed; that members should bring objects for exhibition, and discussions should be encouraged. This seemed at one time likely to prove successful, though latterly it has been evident that many members and visitors come with the hope of being amused, rather than with any intention of trying to help in making the meetings pleasant and instructive. Perhaps the feeling that they must do something or the Society must collapse, may induce them to enter more into the object of these meetings, and thus the cloud which has come over our prospects may have come for some real good. We should certainly prefer having only a dozen workers, if they had the interests of the Society at heart, rather than the number we have now, when many of them only come to be amused.

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Turning now to the past half-year, we trust that our Report will show no inconsiderable amount of work done. The new system of three terms causes us to remain at Marlborough during July, and in Entomology and Botany an unusual amount has been done. Meyrick has been increasing our list to an enormous extent, though who will be able to succeed him as head of the section is doubtful. There are several members of that section, but none of them capable of taking the lead, and we can only urge them therefore to work together till some one turns up of sufficient knowledge to do so.

In Ornithology a fair number of notices of oviposition have been recorded, but from want of a head of the Section many important notices of arrival and departure of birds have been lost, and until we can secure a competent head we fear that we cannot do much more than is done now. Grove has proved very useful, and we trust that his increased work higher in the school will not prevent his taking the lead.

In Botany almost every plant has been observed, and only among those species which do not occur within any walking distance of Marlborough is an occasional omission. The large number of observers shows that good work has been done. The tables at the end, giving the results of nine years' observations on 124 species, have an interest only for a limited number: still it was deemed advisable to insert them as having possibly some scientific value.

Geology, we are sorry to say, is still in abeyance: nor do we see any chance of its being revived at present. Mr. Gregory still comes down to see to the collections, so that everything is ready should any spark of life occur in this quarter.

The Museum, inasmuch as it is used for a class-room, is not very well suited for the study of Natural History: but much has been done to make it a pleasanter room, and one more suited for work. The College has kindly undertaken the cleaning of the walls and desks, and through the liberality of H. T. Stanton, Esq., F.R.S., who sent the munificent donation of £10 for museum purposes, we have been enabled to get better light at the table. The cabinets for birds have also been enlarged, and though the new arrangement undertaken by E. F. im Thurn, Esq., has not yet been begun, still the arrival of five boxes of skeletons, and stuffed birds, with the information that there are "more to follow," is indicative that as soon as ever time can be spared, we shall see a great and beneficial change in our present ornithological collection. As soon as ever the cases are finished, a proper arrangement of our Archæological collection will be made by F. E. Hulme, Esq., F.L.S., F.S.A., and we have already two large table cases filled with coins: the arrangement of this part of our collection being deferred

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till the arrival of some coins from the British Museum, which have been purchased by the aid of Dr. Farrar and other friends.

The Entomological collection has been increased by E. Meyrick, who has also replaced some of the bad specimens by better ones. A. C. Hilton, Esq., has presented the specimen of *D. Livornica*, which was undoubtedly caught near Marlborough, and the fine collection of Indian Moths and Butterflies, presented by Capt. R. B. Reed, has been placed in suitable boxes, and forms a magnificent addition to this part of our museum.

In the Botanical garden, notwithstanding the unavoidable loss of several species last year, the donation of additional ones by the Rev. Canon How, C. H. M. Thring, and others, as well as the vigorous growth of those still in the garden, have enabled us to present a very good show of really healthy plants. The erection of a new tool-house, and the supply of fresh tools, has told heavily on the receipts of the Society, but from the increased interest taken in the garden, the committee feel that the money has not been unwisely laid out.

We cannot help alluding to the real loss the Society has sustained in the departure of C. E. Vaughan from the school. Having so far survived as to obtain the Head of the School for our Secretary, it is disappointing to find that with him we shall also lose all our VIth Form members. But one thing is certain: it is quite possible for a member of the VIth Form to render essential service to the Society. In addition to the other ties upon him as head of the school, Vaughan has always found time to attend our meetings, and to work well on the committee, and if that be possible with one who has other calls on his time, it is quite clear that the demands on the time of those who have not these other calls cannot be excessive. With Vaughan we shall lose one who was really interested in the Society, and we beg here to tender him our sincerest thanks for the able manner in which he has acted as Secretary, and for the time and attention he has devoted to the Society.

It only remains to return our thanks to all those who have aided us. A complete list of Donors to the Museum will be found at the end of the Report, to one and all we beg to tender our heartiest thanks. But in addition to those mentioned as actual Donors we cannot forbear to mention the name of F. E. Hulme, Esq., F.L.S., F.S.A., who still continues to show disinterested kindness to the Society. The beautiful plate which adorns the present Report is entirely due to him, and the tasteful manner in which the Museum was adorned on the Prize-day was mainly the results of his handiwork: and we can safely say that he has never spared time or trouble in rendering the heartiest assistance to the Society in every possible way.

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LIST OF MEMBERS.

President :

Rev. T. A. Preston.

Secretary :

C. E. Vaughan.

Librarian :

E. Meyrick.

Committee :

The Ex-officio Members.
Rev. A. Babington.
F. W. Giles.
H. S. Sankey.

Honorary Members :

Rev. G. G. Bradley, D.D.
H. M. Moule, Esq.
F. E. Thompson, Esq.
W. E. Mullins, Esq.
C. M. Bull, Esq.
Rev. J. F. Bright.
Rev. J. Sowerby.
Rev. C. W. Tayler.
Rev. A. Babington.
W. Fergus, Esq., M.D.
S. B. Dixon, Esq., F.G.S.
F. Storr, Esq.
W. H. Macdonald, Esq.
J. F. Duthie, Esq.
G. H. Dawson, Esq.
Rev. A. C. Almack.
E. F. im Thurn, Esq.
G. K. Mills, Esq.
W. Mansell, Esq.
Rev. G. W. de Lisle.
H. A. Evans, Esq.
Rev. J. W. Mills.
E. C. Sewell, Esq.
J. Walker, Esq., M.D.
D. E. Leighton, Esq.
W. W. Fowler, Esq.
M. H. Smith, Esq.
J. F. Cornish, Esq.
C. Sankey, Esq.
A. H. Beesly, Esq.
F. E. Hulme, Esq., F.L.S., F.S.A.
Capt. H. O. Bateman.
Rev. C. E. Thorpe.
Rev. J. S. Thomas.
C. A. Sladen, Esq.
G. E. Manisty, Esq.
W. Koch, Esq.
Rev. F. W. Farrar, D.D. F.R.S.
W. P. Sellick, Esq.
H. C. Spry, Esq.
G. F. Rodwell, Esq.
W. D. Fenning, Esq.
W. D. Smith, Esq.
R. E. Price, Esq.
Capt. R. B. Reed.
H. J. Verrall, Esq.
H. M. Hamilton, Esq.
G. H. Cremer, Esq.

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Members :

H. S. Sankey.	H. W. Thatcher.	A. E. Garrod.
G. C. Mansel.	M. W. H. Milner.	R. A. Farrar.
E. Meyrick.	S. F. Townsend.	H. C. Legh.
R. W. Doyne.	W. H. Williams.	A. W. Taylor.
C. E. Vaughan.	H. S. Smith.	O. F. Jacson.
F. W. Giles.	A. V. White.	C. Colville.
A. P. Macgregor.	H. C. Glyn.	P. F. C. Froom.
J. W. Dudding.	A. W. Flux.	N. Manders.
J. E. Pierson.	J. H. Sanderson.	F. G. Heaven.
E. Hunter.	T. G. Balfour.	A. D. Smithe.
N. Whiting.	W. M. Grove.	P. B. Smithe.

Associates :

T. N. H. Smith.	A. F. Hoare.	H. S. Philpot.

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RULES.

1.—That this Society be called the Marlborough College Natural History Society.

Constitution.

2.—That the Society consist of Members, Honorary Members, and Associates.

Officers.

3.—That the Officers of the Society consist of a President, Secretary, Librarian, and Curator, to be elected from and by Members of the Society.

Election of Officers.

4.—That those Members of the Committee, who are not ex-officio Members, be elected terminally and that the retiring Members be eligible for re-election.

5.—That the same rule apply to the Librarian.

6.—That each candidate for election give in his name to the President, any time before the day of election.

7.—That all canvassing for votes by a Candidate, or by his friends with his knowledge, shall at once disqualify him for any election that term.

8.—That any Member canvassing for votes for a Candidate, or for a new rule, forfeit the right to vote on any occasion during that term.

9.—That the election of officers of the Society take place near the end of the term, but that they do not come into office till the beginning of the next term.

10.—That on the occurrence of any election, each Member of the Committee have double the number of votes of any other Member of the Society.

11.—That in the event of a vacancy occurring in the Committee or any other office to which Members are elected at the beginning of each term, the vacancy be filled up by the Committee.

12.—That eight Honorary Members have the power of debarring a candidate from standing for any office.

Management.

13.—That the affairs of the Society be conducted by a Committee, consisting of the President, Secretary, and three other Members of the Society, to be elected from and by Members of the Society; three of whom shall form a Quorum.

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President.

14.—That in case of an equality of votes, the President shall have a double or casting vote.

15.—That in the absence of the President, the Committee be empowered to request any Member of the Society to take the chair.

Secretary.

16.—That the duties of the Secretary be to keep a list of all the Members of the Society, and of all former Members and Benefactors who may wish to receive the Reports of the Society; to summon meetings (when necessary) of the Society; to keep a detailed report of the proceedings, as well as lists of Members and Visitors present at each meeting, and generally to act under the direction of the Committee in all matters connected with the welfare of the Society.

17.—That in the absence of the Secretary from any meeting of the Society, minutes of the proceedings be taken by a Member of the Committee, appointed by the President.

Librarian.

18.—That the duties of the Librarian be to keep a catalogue of the Library, with the name of the Donors, and to see that the Library Regulations are carried into effect.

Curator.

19.—That the Curator be responsible for the order of the Museum, and when necessary assist the Secretary in the distribution of the Reports of the Society.

Library.

20.—That any Member of the Society be at liberty to consult any of the books belonging to the Society, but that only certain volumes, to be decided on by the Committee, be allowed to be taken from the room.

21.—That if any Member wishes to take a volume from the Museum, he shall give his name, and the name of the book, to the Librarian, who shall enter them in the book kept for the purpose.

22.—That every volume so taken out be returned by the end of the term, but that no book be kept more than one month.

23.—That if any volume be damaged, such damage shall be reported by the Librarian to the Committee, who shall decide upon any further proceeding in the matter.

Museum.

24.—That any Member of the School, who is not a Member of the Society, be allowed access to the Museum at such times as it is open to Members of the Society generally, provided he first obtain leave from the President, which

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leave shall be renewed every term, but may be taken away at any time, if the privileges be abused in any manner.

25.—That in all cases the Museum be used for the study of Natural History alone, and not as an ordinary Reading Room, except on Sundays.

Botanical Garden.

26.—That the Garden be under complete control of the President, or of some person appointed by the President.

27.—That the Garden be open to Members of the Society, at all times, and that each Member be allowed to introduce one visitor.

28.—That any Member on application to the President can have the charge of a bed.

29 — That no plants be put in without special leave from the President.

30.—That Members may keep any plants of their own in such places as the President shall appoint, as long as the ground is not required.

31.—That the Society's flowers may not be picked.

32.—That Members may gather from their own plants, but may not depute others to do so.

Members.

33.— That the election of new Members rest entirely with the Committee.

34.—That every Member pay a terminal subscription of 2s., to be paid at the first meeting of the Society in that term.

35.—That if a Member be elected after the commencement of the term, the amount of his subscription for that term shall be settled by the Committee.

36.—That Members have the right to be present, to state their opinions, and to vote at all general meetings of the Society; to introduce two visitors at all general meetings of the Society; to have personal access to the Museum, and to introduce a visitor at such times, as shall seem fit to the Committee.

37.—That Members be considered as Probationary Members for the first term after their election.

Honorary Members.

38.—That Honorary Members have all the privileges of Members, except the power of introducing a Member of the School to the meetings of the Society.

39.—That Honorary Members pay 5s. a half-year, for which they shall be entitled to a copy of the Report.

40.—That Honorary Members may compound for all future subscriptions by the payment of a sum of two guineas.

Associates.

41.—That Associates be confined to members of the VIth and Upper Vth Forms; that they pay 1s. a term, and be entitled to the use of the Museum,

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and to attend the meetings of the Society whenever they think fit, but shall not be entitled to vote on any question, to introduce a visitor, or to take books out of the Museum.

Visitors.

42.—That on such occasions when the number of those who wish to be present as visitors at the general meetings of the Society is greater than the number of Members who attend, the President and Committee shall be empowered to admit three or more each, as shall seem fit.

Suspension of Members.

43.—That any Member be liable to be excluded from the Society by the Committee, if, in their opinion, he shall have failed to show sufficient energy in the working of the Society.

Sections.

44.—That sections be formed for the more accurate study of the different branches of Natural History, and that the heads of these sections be chosen by the Committee half-yearly from Members of the Society.

45 —That these sections shall hold meetings as often as shall seem fit to the Heads of the several sections, at which any Members of the school, with the sanction of the Head of that section, may attend.

Meetings.

46.—That ordinary meetings of the Society be held once a fortnight, but that the Secretary be empowered to call extraordinary meetings when necessary.

New Rules.

47.—That any Member of the Society have power to propose any new rule or any alteration in an old one, provided the motion be seconded by another Member.

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MEETING HELD FEBRUARY 14th, 1873.

The President announced that Sanderson and Daltry had been elected members, A. F. Hoare an associate.

F. E. Hulme, Esq., F.L.S., then read the following paper, exhibiting many illustrations, on

HERALDRY.

Before entering upon the consideration of the subject for which my name is down this evening I may perhaps be allowed to detain you a moment while I endeavour to vindicate my choice of such a subject as being at all suitable for a meeting of a Natural History Society. In the first place, so long as we have our archæological collection and such an admirable series of coins, occasional papers of a somewhat antiquarian character will not be altogether foreign, I think, to the aims of the Society; while, secondly, the botanical and entomological sections are in such excellent hands that I prefer to leave those subjects to those amongst us who have more conspicuously and thoroughly made them their study, taking more especially to myself a section of our work that has not hitherto, or at least within my own knowledge, had an exponent. I am afraid that my red lions, blue boars, and black eagles are scarcely natural enough in themselves to justify on that ground alone their appearance before a Natural History Society, trusting therefore but little to this plea, I will rather boldly confess that of zoology or ornithology my paper will scarcely legitimately treat, and I shall base my claim on your indulgence on the strength of the two first motives I have assigned as influencing me in taking you this evening somewhat out of our beaten track.

Heraldry or Blazonry has played so conspicuous a part in many periods of art, and more especially throughout the whole series of the gothic styles, not only in England, but also in France, Spain, Germany, Italy, &c., that a knowledge of at least its elements is an indispensable part of the training of the archæologist, or of any one interested in even a minor degree, in ecclesiastical or baronial architecture, illumination, stained-glass, monumental brasses and other such-like features of the past. The herald, in the original and literal meaning of the term, was the shouter, the old French term, "herald," identical with the English, and the German "herold" being derived from the German verb "haren" to shout. It was his duty to challenge to battle, to carry messages between hostile armies, to read the proclamations of the monarch, and finally to proclaim at the tournament the achievements and

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armorial bearings of the various competitors, while others would "blasen" or blow trumpets, to attract attention and to give additional pomp and grandeur to the ceremonial; hence blazonry or heraldry, in its original sense a public proclaiming, also became of necessity a description and registration of the armorial bearings of those permitted to assume them.

It is of course impossible to do more than just dwell on a few of the leading points of our subject; in the brief time we here have at our disposal we can therefore only indicate some few of the leading features and principles, thus far clearing the way before you for your own personal study, pointing out matters of interest and examples to be studied, books to be consulted, making my remarks as far as possible useful and suggestive, but after all, of necessity, leaving much of the hard work to be done by yourselves. To those of my auditors who would desire to work out the present subject at greater length, I would recommend the study of Boutell's English Heraldry, and Cussan's Manual as handy text-books; there are many other books of course, but the two I have mentioned will suffice to give you a very fair knowledge both of the history and practice. Old MSS. brasses, seals, and glass painting will afford many excellent examples for study. The "rolls of arms" as they were termed, that were drawn up by the heralds at any particular battle or siege, of those knights who were present, afford us another and very good source of information: perhaps the most interesting and instructive of these rolls of arms, that have been preserved to our day is that which, in a metrical form, records in Norman-French the siege and capture of the fortress of Carlaverock on the Scottish frontier, by Edward 1st in the year 1300. The banners and shields of the princes, the nobles, and knights engaged are set forth and coloured with minute exactness. Many of the shields are without any device whatever, their distinctive character being produced by some peculiarity in the bands of colour; such may be considered to be derived from the earliest times, and have generally been deemed of greater honour, as they certainly are of greater antiquity, than the majority of those that bear more complex devices. The early glass possesses this great recommendation, that we see the original colours still preserved; unlike painted decorations in panels, &c., there is no great risk of its having been touched up, or as it is termed, restored. Ancient glass may be broadly speaking, divided into two great classes, the ecclesiastic, with scriptural or legendary subjects, to be met with in our cathedrals and abbeys; and the heraldic, emblazoned with coats of arms and other devices of chivalry, to be commonly found in old palaces and halls, both in England and abroad; many good and easily accessible illustrations of this latter class may be seen at the palace of Hampton Court.

In all ages of the world, so far as we have any record, we see that there has been the desire on the part of nations, tribes, and individuals to distinguish

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themselves by certain recognised devices, or badges, or peculiarities of dress (as in the Scottish clans), or by titles. In the book of Numbers for instance, we read that the Israelites pitched by their standards, everyone after their families, according to the house of their fathers. Virgil and other classic writers refer to the special badges adopted by their heroes and chieftans, thus Astur bears a silver swan, others shields powdered with stars, serpents or dolphins. In other cases special epithets are employed, which though of course not in any way heraldic, serve further to illustrate the desire for personal distinction, which was one great motive in the origin of heraldry, such as in our own history—Edmund Ironside, Richard of the lion-heart, Edward the Confessor.

It was not until the 13th century that Heraldry as a science began to receive full attention; faint traces of it are perceptible in the closing years of the 12th century—in the Bayeux tapestry the shields of the Saxons are simply charged with lines and crosses, while some of the Normans bear extremely grotesque heraldic animals—but in the reign of Henry III AD. 1216 to 1272, it became possessed of a system, a classification, and a technical language of its own, that have ever after been recognised and adopted, hence such records as the roll of Carlaverock already referred to, are as intelligible to a modern student of heraldry and as definite in their meaning, as to those who caused them to be drawn up. About this time too the practice of embroidering the arms upon the surcoat worn over the armour was adopted, hence the expression "coat of arms" applied to armorial bearings. The arms of Edward the Confessor are sculptured on his tomb in Westminster Abbey, but they were placed there in the reign of Edward 2nd, there is no shadow of proof that he ever bore them. In the days in which every prominent person bore heraldic arms, and when blazonry had attained to great renown, it became a custom to bestow such heraldic arms also upon the men of rank of former times, both to distinguish them, and also, as it was thought, to treat their memories with a becoming honour and respect. Heraldry, like symbolism, the subject of some previous remarks of mine, has suffered ridicule and undue depreciation from the consequences of the writings of its too-enthusiastic adherents, some such having gravely discussed and settled the armorial bearings of David and Gideon, Sampson, and Joshua, making a true coat of arms out of Joseph's coat of many colours, and crowning the absurdity by declaring that on the marriage of Adam and Eve, Adam adopted on his own red shield, Eve's plain shield of silver, Abel bearing the same arms but with the addition of an apple.

Until the time of the Crusades a knight was free to choose any device that he liked, without the express permission of the king, or any reference to the heralds, but when so great a number of men of all nationalities were gathered

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together in the Holy Land, it became absolutely necessary, to prevent the confusion arising from so many leaders bearing very similar arms, and those in subordinate positions also bearing devices identical with those of the chiefs of the expeditions, to re-arrange the various devices in some recognised and positive order. Towards the close of the reign of Edward III, heraldry had perhaps arrived at the summit of its fame, in the respect paid to it, and in its influence on men's minds, in inciting them to deeds of heroism, as in the case of the heart borne by the family of Douglas, granted to them to commemorate the duty entrusted by Robert Bruce to Sir James Douglas—that he should bear with him to the crusades the heart of his sovereign, and bury it in the Holy Land. The handing down from sire to son of such records of noble service would be in itself an incentive to subsequent wearers to tread in the same path of honour, that the discrepancy between the heroic ancestor and his degenerate successor might not be too patent to all beholders. To quote the words of Ben Johnson—

> "Boast not the titles of your ancestors, brave youths;
> They're their possession, none of yours,
> When your own virtues equalled have their names,
> 'Twill be put fair to lean upon their fames,
> For they are strong supporters; but till then,
> The greatest are but growing gentlemen."

With the decline of chivalry, blazonry also to a great extent became a thing of the past. Heraldry was soon found to possess other advantages besides those more intimately connected with its use in war, or the tournament; thus very soon after the Norman conquest, in consequence of their presence being required to give validity to legal documents, seals became instruments of the greatest importance, and it would at once be obvious that heraldic insignia, from their simplicity, and also as the distinctive bearings of those who thus used them, were exactly suited to the purpose, and to the fortunate circumstances of the legal importance attached to such deeds and charters we are indebted for the careful preservation of these interesting relics, possessing historic and heraldic value of the highest order. Many of the early arms bore obvious allusion to the bearer, a kind of symbolism easily remembered. By English authorities this is termed "canting" heraldry—in France, "armes parlantes," arms that speak, or in other words, that explain themselves. A few illustrations will show this more clearly. The family of Whalley bears three whales' heads on their shield: Yard, three yard-measures; while De Vele and Calverly both have a calf; Ramsey, a ram; Lambert, a lamb; Beeston, bees; Shelley, snails; Rossal, roses; Falconer, a falcon; Butler, Cups. Others, from the change of language, are not at first so obvious. The house of Arundel bore swallows, in French, "hirondelles;" Martel, hammers, from the

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French word "marteau"—thus on the door of the ruined Church of Bivalle-le-Martel, near Rouen, we find curious nails, the heads in the form of a hammer, thus recalling the name and armorial bearings of the family of Martel, the lords of this ancient domain. Other examples are seen in the case of the family of De Lucy, who bore three lucies, or pike; the bear borne by Fitz-urse, "ours" in French or "ursa" in Latin being a bear; and the otters, "loutre," borne by the Luttrels. Others again allude to the occupations of the bearers, as the teazel-plant borne by the cloth-workers company, and largely employed in the manufacture of cloth; and the horse-shoes borne by the company of farriers.

All the various figures and devices represented on a shield, no matter what their characters, are termed charges, and the shield is said to be charged with them. As in the olden time the heraldic charges were borne by their owners on their surcoats and shields, so, in the present day, the conventional form of shield is still employed. There is no fixed rule for the form of shield used, except that un-married ladies and widows always bear their armorial devices on a lozenge. The vocabulary employed in heraldry is used with studious exactness, speaking a language that would be equally well understood in former times as in our modern revival, or on the continent as well as at home, so that if I write the description of a shield, say for instance, "azure, a chevron dancetteé or, between three mullets argent," and send it to five hundred students of heraldry in England, France or Germany, the drawings that I receive in return, shall be absolutely identical in form and colour. We cannot of course now go into such detail as this exact use of technical terms implies, as a new language can hardly be acquired in one evening. The various parts of a shield all have special names in order that the position of any given charge may be accurately defined. The face of the shield may be divided by lines in various directions, thus we get per pale, Fig 1, when it is cut by a line vertically through the centre; per fess, Fig 2, when by a line horizontally through the centre; per cross or quarterly, Fig 3, when two or more such lines cut the shield into rectangles; quarterly, does not however mean in heraldry, as in ordinary conversation, a division into four parts, there may be many more. Other modifications are, per bend, Fig 4, when a diagonal line is employed; per saltire, Fig 6, when two diagonal lines cross in the centre, and per chevron, Fig 5, when two such slanting lines springing from the lower angles of the shield, stop at their meeting place in the centre. These dividing lines are not necessarily straight, they may be indented, or notched like the edge of a saw, embattled, as in Fig 4; rayonnée, when flame like or rayed, as in Fig 2; wavy, and several other forms. Shields are distinguished further by various colours, and owe to the brilliancy of such colouring much of the beauty of their effect when employed in art, the ruling motive however, we need scarcely say, being the great value that such brilliancy

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and precision of colour gave to them as a means of identification in earlier times in the dust and turmoil of the strife. The heraldic term for this brilliant enhancement is "tincture," the term comprises metals, colours, and furs. The metals employed in blazonry are gold, heraldically known as "or," and silver, "argent." The colours are red, or "gules," from an old Norman French word for the mouth and throat, in evident allusion to the deeply ruddy colour of those parts; blue or "azure"; black or "sable"; green "vert"; purple, "purpure." Where metal or colour can be employed there is of course no further difficulty in representing any coat of arms, but as in engravings, coins and seals, such colouring is not admissible, some other intelligible means of giving the necessary distinctive character must be resorted to. To effect this the following method is resorted to; the portion of any shield that is to be understood as golden is dotted over with a number of little spots; silver is left entirely white; red is shewn by a series of vertical lines; blue by horisontal lines; black by lines crossing each other in both these directions; green by diagonal lines drawn from right to left, and purple by diagonal lines from left to right. In heraldry the terms left and right are however never met with, they are sinister and dexter respectively. It must also be remembered that the shield in actual service was held in front of the body, so that the real right of the shield is referred to, and not the apparent right as seen by anyone facing it, such being in reality to the wearer the left of the shield. The earliest example of this use of lines to express colours is seen in the seals affixed to the death-warrant of Charles I. As a familiar example you will see them also thus shewn on our coinage, on for instance the shillings of the third and fourth Georges. The various means of representing the furs, ermine, erminois, vair, potent, countervair, potent are shewn in our figures. * Ermine is represented by black spots on a white ground, as in Fig 3. Erminois has black spots on a golden ground, as in Fig 5. Some few old writers while thus employing the terms I have mentioned for the colours, as azure and vert, limit their use to the armorial bearings of gentlemen, employing the names of jewels to describe them in the devices of nobles, or planets in the case of sovereign-princes. In accordance with this, red is gules, or if found on the shield of a nobleman, ruby, or on a monarch's arms, Mars. Similarly, green is vert, or emerald, or Venus; yellow, or, topaz or Sol, it is as you will see, but a needless accumulation of names for one and the same thing, and found comparatively little favour, and I only mention it, lest possibly in referring to some old book my hearers may find such a distinction drawn, and for want of a clue be puzzled to account for it. The charges found

* The paper at the time it was read was illustrated by large coloured diagrams, the whole of these owing to the cost, it has not been found advisable to reproduce here. Any good manual on the subject will be found to be freely illustrated with all needful examples.

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upon shields are divided into three classes, honourable ordinaries, subordinaries, and common charges; of these the first, as you would judge from the name, are esteemed the most honourable, as without doubt they are the most ancient. Unlike the common charges, which may consist of anything, lions, reaping hooks, roses, swords, scallop shells, &c., the ordinaries appear to have been originally bands or bars of metal rivetted on the shield to give it greater strength, being in their origin structural and essential to the proper function of the shield. The chief, bend, pale, fess, bar, chevron, pile, cross and saltire are the honourable ordinaries. The broad and black horizontal band in the upper part of Fig 7 is an example of the chief. The oblique band of gold on Fig 9, or the line of blue on Fig 20, are examples of the bend. The pale is a vertical band, as in Fig 8. The fess is a band crossing the centre of the shield horizontally, as in Figs 10 or 14. The cheveron is seen in Fig 11, the golden band being in that form; the red bands in Fig 3 are also chevrons. The saltire, a form like the letter X, is represented in Fig 12. The pile, a wedge form, is seen in Fig 20, thrice repeated. You will on reflection see that apart from questions of structure, these broad vertical, horizontal, or inclined coloured bands were much more distinctive than the ordinary charges could possibly be, and in the confusion of battle this was a vital consideration. Now-a-days a man's shield may be covered with quarterings and elaborately emblazoned with star or eagles or fifty other things, but in the thick of Cressy or Poictiers, a simple band of black running down the centre of a yellow shield, or a broad stripe of silver on a crimson ground would practically be much more easily recognised; the knights of course wore nothing approaching to our modern uniform, and their features could not be distinguished through the bars of the helmet, hence the only means of identification left was in the sound of the voice or observation of the device borne on the shield and horse trappings. We see the importance of this principle fully comprehended, for instance in the signal code of our war and merchant-navy. Any elaborate devices would be lost in the distance at which signalling is often carried on, and the messages attempted to be thus conveyed would often be completely misunderstood; to avoid this you will see that the colours employed are such as give clear and distinctive contrasts, and the forms adopted are of the most simple character, mere lines, spots, chequers or bands.

The cross form is capable of many varieties that ought perhaps rather to be regarded as common charges: Edmonson, in his "complete body of Heraldry" names one hundred and nine varieties. Many of these no doubt originated in the crusades, when the cross form was so universally borne, and yet with a desire or to, as far as possible, make recognisable differences in appearance by colour by modification of the typical form. The cross pommée is seen in Fig 1; the cross fleurie in Fig 6; the cross crosslet in Fig 14. Others ordinarily met with are

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the patonce, moline, Fourchée, clechée, patée, avellane, potent and recercelée. The English wore in the Holy Land white crosses; the French red; the Italians and Flemings, green; the Germans, black. The ordinaries are not always bounded by straight lines, they may be indented, invected, &c., as shewn in the engrailed bend, Fig 9.

The subordinaries are the quarter, canton, gyron, bordure, orle, tressure, inescutcheon, lozenge, fusil, rustre, fret, and pall; on these we must not however here dwell as we cannot pretend to go into any detail, the tressure you will see very well shown on our florin, where like an ornamental fringing, it surrounds the rampant lion of Scotland, while of the inescutcheon a very good example may be seen on a George shilling or half-crown, where the arms of Hanover are borne on an inscutcheon, or smaller shield, in the centre of the British arms. The quarter is clearly seen in the golden square of Fig 13. The gyron, a trangular form, is never in English heraldry met with alone, it is always grouped, as in Fig 15. The orle is shewn in silver in Fig 16. The lozenge is represented in Fig 17. It will be impossible to even name the common charges, as there is no object, real or imaginary, that may not be thus borne, and examples are so numerous that we must all be familiar with at least many of the forms employed: amongst animals the lion seems to have ever held the highest place in men's minds, and to render it distinctive many modifications of position have been adopted; thus we have the lion rampant when in the position seen in the Scottish arms, rampant regardant when, the general position being the same as the last, the head is shown, as in the lion supporting the Royal arms, in full view instead of in profile; statant when standing on all four legs; passant, when the right fore paw is raised as if in walking; salient, when both fore paws are raised together as if in the act of springing. In other cases a portion only of the animal is represented, a demi-lion, or the head, or leg, or paw, or tail; thus the family of Cork has for arms three lion's tails. Boars, wolves, foxes, stags, bulls, and many other beasts are also commonly to be met with. Amongst birds the eagle holds the same pre-eminence that we have found the lion enjoying amongst beasts. Its presence frequently betokens a German alliance. Boutell tells us that the German emperors adopted it in support of their claim to be the successors of the Cæsars. The eagle has been also adopted by France, Prussia, Austria, and Russia in their national insignia. Amongst numerous other birds we most commonly meet with the falcon, cock, pelican, heron, swallow and raven. Bats, fish, reptiles, and insects are occasionally used. Amongst mythical beings we commonly meet with the cockatrice, dragon, griffin, wyvern, phœnix, triton, mermaid, sea-horse, sea-lion, harpy, sphinx, sagittarius, salamander and unicorn. The sun, moon, as in Fig 10, stars, trees, wheat-sheaves, arrows, crowns, buckles, gauntlets, portcullis, (very familiar to

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Londoners as the badge of the city of Westminster; it may be seen in conjunction with the Tudor rose lavishly carved on the exterior of Henry VIIth's Chapel at Westminster Abbey,) swords, keys, Figs 22, 23, 24, cups, spurs, different kinds of knots, as in Fig 1, the Bourchier knot, hearts, anchors, sceptres, are all examples of well-known common charges.

It is a fundamental law in heraldry that colour, shall not be placed upon colour nor metal upon metal, thus blue and red, or white and yellow employed together would be false heraldry, the only exception to this is where any object is represented in its natural colour, in heraldry termed "proper" and marked P.P.R. in descriptions of blazonry, a tree might therefore be blazoned vert on an azure ground. In marshalling several arms together into one shield, each is treated as being complete in itself, thus in our national arms the blue shield of of Ireland stands side by side with the red shield of England without being deemed a violation of the law, and again in the example Fig 22, where two shields are combined together into one armorial bearing, each in itself is correct in colouring, the black eagle on the golden ground or the silver key on the red field. Their combination into one shield is, so to speak, an accidental circumstance arising from an alliance; each is correct in itself, and the accident of the black eagle of the one coming in juxtaposition with the crimson of the other does not in any way prove an infringement of the rule. This method of showing two bearings upon one shield by the representation of half of each of them is termed dimidiation, Figs 21, 22; it is not altogether satisfactory, as it mutilates both shields and often cuts up the charges very awkwardly. Impalement, Fig 23, where both are represented in their entirety is far preferable. Impalement is largely used in all official arms, bishops, for instance, impale the arms of the bishopric with their own family arms. Quartering, Fig 24, is another method of combining several bearings together into one armorial device, we see it for instance in the arms of James I, where the lilies of France, the English, Scottish, and Irish arms are thus treated. There may occasionally be mere agroupment, where each shield is complete in itself and merely combined in some ornamental way with the others by ribbons, panelling, &c. You will see the English, Scottish and Irish arms thus grouped on our florin. A distinction was sometimes made between the shield of war and the shield of peace, the first being the heraldic arms of the bearer; the second, an arbitrary device; an especially good example of this may be seen on the tomb of Edward the Black Prince in Canterbury Cathedral, where the two shields are sculptured in alternate panels.

"The boast of heraldry, the pomp of power,
And all that beauty, all that wealth ere gave,
Await alike the inevitable hour,
The paths of glory lead but to the grave."

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Crests were originally adopted and worn upon the helmet as further distinctive signs. Badges were employed on the horse-trappings, or the breasts or sleeves of the common soldiers and retainers of the nobility; the badge of the Percys for instance was the crescent moon; of the house of Lancaster a red rose or columbine flower; Plantagenet, the broom-flower; the Black prince, three ostrich feathers, borne ever since by the Princes of Wales; Richard 2nd, a white hart, or the rays of the sun issuing from behind a cloud.

The motto was originally the battle or rallying cry of the knight who bore it; thus the motto of the Percys was "Esperance en Dieu." Those of my hearers who are of Shakesperian tastes will remember the exclamation of Hotspur—"Now, Esperance! Percy, and set on." A motto, unlike the arms, can be changed at pleasure, or need not be possessed at all. It may be in any language. It is often chosen from a punning allusion to the bearer; the family of Vernon for instance have "Vernon semper viret," which may be read either as "it is not always spring," or "Vernon ever flourishes." Sometimes the mere ring of the words has apparently greatly influenced the choice, as in "Astra castra, numen lumen," "the stars my canopy, Providence my light," or the old Norman-French "un roy, une foy, une loy," one king, one faith, one law; or again, "pro rege, lege, grege," for the king, the law, the people. Mottoes are not the exclusive property of any one family or corporation, but may be borne by several; the last motto we have just given is that selected by three families: the Bessboroughs, Broughams, and Ponsonbys all adopting it. A great proportion of the mottoes in use are chosen from conveying a religious feeling, thus "Without God there is nothing, with God, enough;" "Christi crux est mea lux;" "Spes tutissima cœlis;" recalling to mind Cowper's line—

"All hope, despair, that stands not on the cross."

Another large class may be considered not so strictly religious as appealing to morality in a somewhat lower sense; these too are very numerous: "do well and doubt not," "Dread shame;" or again, "Be just and fear not," sufficiently illustrate this section. Some again are chosen to commemorate events in which the bearer of the motto or his ancestors took prominent and honourable part, as "Algiers," "Vimiera," "China," or the "Ready aye Ready," more obscure in meaning, but well illustrated in one of Scott's stirring stanzas.

"His ready lances Thirlestane brave,
Arrayed beneath a banner bright.
The treasured fleur-de-lis he claims
To wreath his shield, since Royal James,
Encamped by Fala's mossy wave,
The proud distinction grateful gave,

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For faith midst feudal jars;
What time, save Thirlestane alone,
Of Scotland's stubborn barons none
Would march to southern wars;
And hence, in fair remembrance worn
Yon sheaf of spears his crest has borne;
Hence his high motto shines revealed,
"READY AYE READY" for the field.

Other mottoes startle us by their tone of arrogance; of these we may quote "Homo Sum," "Beware," "Follow me," "Never behind," "Alte volo." The supporter of the arms is sometimes an angel, man or animal, or at other times an imaginary creature, placed as if protecting and sustaining the arms; their use except under special circumstances by direct license of the monarch, is confined to peers and knights of the Bath. There are almost invariably two, in early heraldry alike, in later times very rarely so; our national lion and unicorn afford us a good and familiar example. Elizabeth, Mary, and Henry VIII, had a lion and a greyhound as supporters to their arms, Richard III, used either a golden lion and silver boar or two silver boars: Edward III, a lion and eagle; Edward IV, a lion and bull; Edward VI, a gold lion and red dragon, Richard II, two white stags; Henry VII a red dragon and white greyhound. The lion and unicorn were first employed at the union of England and Scotland under James I, and have continued in use ever since. The lion has been almost invariably employed as one of the supporters as a badge of England. The Scottish arms have always been supported by two unicorns, hence at the union of the two kingdoms, the lion and the unicorn were naturally chosen as the supporters of the armorial bearings of the realm. George III was the last king who carried the French lilies on his shield; his arms were, first quarter, England and Scotland impaled; second, France; third, Ireland; and fourth, Hanover. The lilies of France were first assumed by Edward III in the year 1340, and continued in use until 1801, though except in one reign during that long period it was a mere pretence and shadow of sovereignty. The French lily or fleur-de-lis is supposed by some to have derived its name from the river Lys on the borders of Flanders, on the banks of which it is particularly abundant, and no doubt many of my hearers are familiar with it under the name of yellow Iris or yellow Flag, and have admired the brilliant and graceful yellow flowers as they rise up by the sides of our streams in the midst of their long sword-like leaves. It was at one time considered as particularly sacred to the Virgin Mary. Others deny that it is an Iris flower at all, thinking it a conventional form, derived perhaps from a triple leaf or the head of a halberd or spear, but of which nothing conclusive as to origin can now be known.

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We occasionally find in addition to the inescutcheon, various little accessories to the shield known as marks of cadency, augmentations or abatements. The first of these, the marks of cadency, though now to some extent fallen out of use, have been till lately strictly observed as a means of shewing the seniority of the different members of a family. All the sons of a family having a right to bear the paternal arms it became necessary to devise some small distinction that should at once give the necessary difference and also shew the status of each member of the house; to accomplish this, the eldest son bears a form known as a label, (it may be very well seen in the arms of the Prince of Wales,) the second son a crescent, the third a five pointed star, the fourth a martlet, a bird very like a swallow, the fifth an annulet or ring, the sixth a fleur-de-lis, the seventh a rose, and so on; these signs are placed in the centre of the upper part of the shield. Marks of augmentation are certain honourable additions granted by the sovereign for some special and extraordinary act of national service, and generally in some way allude to the service rendered; thus Charles II granted to Penderell, who saved his life at Boscobel, an oak tree in allusion to the circumstances of his escape. Sir Cloudesley Shovel bore as augmentation of honour two crescents and a fleur-de-lis upon his own proper arms for distinguished naval victories gained over the Turks and French. As an additional mark of honour these marks of augmentation can be transmitted to one's posterity; thus Robert Bruce, once closely pursued by English soldiers only escaped through two men named Torrance rowing him across an arm of the sea; the family still bears as arms two oars crossed, with the mottoe "I saved the king." The family of Hicks-Beach bear three golden fleurs-de-lys, they refer to three French standards captured by Sir Elias Hicks, who for his bravery was also created a knight by the Black Prince; and as a concluding example, an owl, the crest of the Fowlers of Staffordshire, originated in the vigilance of Richard Fowler, a crusader of the time of Richard I, who saved the Christian camp from a nocturnal surprise, and for this service was made a knight, and ordered by the king to assume as his crest the owl. Marks of abatement are now never used, but in the olden time when heraldry entered into the architecture, the daily costume, the seals of documents and in a hundred other ways made itself felt, it must have been a crushing disgrace to be obliged, willing or unwilling, to bear everywhere and openly before every one marks of infamy, to be forced to mix with other knights, and yet be shunned by them as one detected in treachery and cowardice, a disgrace and reproach to his order. Formerly there were nine different acts of dishonour, each bearing its distinctive mark to be affixed to the shield during the king's pleasure, a terrible disgrace obvious to all and understood by all; such as withdrawing from a challenge made, deserting the banner of the king, vainglorious boasting, killing a prisoner when not really needful for defence,

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uttering a lie to his sovereign, drunkenness and licentiousness of conduct, or acting as a traitor towards his king and companions; for this, the most disgraceful offence he was compelled for the rest of his days to bear his arms reversed. The monarch had thus, in marks of augmentation on the one hand and marks of abatement on the other, a very complete and universally recognised system, ready made to his hand, for rewarding the loyal, patriotic, and devoted, and of bringing very speedy and complete punishment upon those who proved false to the vows of chivalry they had solemnly taken. We might now proceed to give some little insight into the various forms of coronets and helmets, since their correct representation is an essential point, but we feel that we must perforce leave much unsaid. In representing the arms of a lady a crest is never introduced; if its original intention is remembered, to distinguish the wearer in the turmoil of the fight, the inconsistency of adding it to the armorial bearings of a lady will according to the authorities at once be evident, though it seems to me that if this line of reasoning be carried but one step further the lady should also bear no shield of arms, for the shield in its primary use was as much an accessory in the strife of war as the crest, and any arguments that apply to the one seem to be equally binding on the other. On the same principle of consideration of the original use, as a mark to distinguish one leader from another, it is inconsistent to represent two or more crests over any armorial bearings, though in the case of matrimonial alliances between two families of rank it is often done, the arms of the wife being impaled or quartered with those of the husband, and the crest of the lady's father being added to the joint arms. Behind a shield and issuing from the crest we often see folds of drapery represented; this is known heraldically as the mantling. The royal mantling is of gold, that of peers of crimson, both are lined with ermine.

Whether heraldry deserves the consideration that it yet receives now that its primary use has for ever passed away, may be an open question, but I trust that I have at least succeeded in showing you that it is guided by positive rules of its own which cannot with impunity be violated. If, therefore, employed at all in church restoration or glass painting, illumination, &c., it can only be properly introduced after some little attention has been paid to rules, which though in themselves arbitrary in character, have received the sanction of centuries, and the ignorance of which, cannot fail to be speedily detected. Illustrations of the need of this special knowledge may from time to time be met with, and it is not a sufficient reason for the violation of the special rules of the subject, to deride it as obsolete, arbitrary or absurd. It may be all this and yet if the thing be introduced at all it should be rightly done according to those rules. If the verdict on heraldry be an unfavourable one, it should at least spring from knowledge, not from want of knowledge. We are not how-

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ever here called upon to decide upon the claims of heraldry itself on our attention, as to whether it is a "noble science," as one book that I consulted calls it, or as another says "the science of fools with long memories;" we have merely to deal with it as a fact that we find prominently brought before us when we deal with much of the archæological work of the past and we must as such accept it, and endeavour to comprehend the laws by which it is governed. In drawing my remarks to a close I cannot do better than quote some few lines of excellent common sense that I met with once while studying the subject; they were inscribed upon the pedigree of an illustrious house by one of its members during the middle ages.

"What profit pedigree or long descents—
From far-fetched blood or painted monuments
Of our great grandsire's visage? 'Tis most sad
To trust unto the worth another had
For keeping up our fame which else would fall,
If besides birth there be no worth at all.
For who counts him a gentleman whose grace
Is all in name, but otherwise is base?
Or who will honour him that honour's shame,
Noble in nothing but a noble name.
'Tis better to be meanly born and good
Than one unworthy of his noble blood;
Though all thy walls shine with thy pedigree,
Yet virtue only, makes nobility.
Then that thy pedigree may useful be,
Search out the virtues of your family;
And to be worthy of your fathers' name,
Learn out the good they did, and do the same.
For, if you bear their arms, and not their fame
Those ensigns of their worth will be your shame."

We have known, in our own and in all times, men of lowly birth do deeds of the brightest and most self denying heroism, deeds that will live and glow in history, and inspire others to a like devotion so long, may be, as the world shall last; and we have seen men of high birth, bearing illustrious names, having every advantage that wealth, station, leisure and culture could give, squander them all in terrible eagerness on the usurer, the jockey, the crowds of so-called friends who fatten on their folly. We have had a sufficient number of examples in each of these classes to prove that the terms nobleman, gentleman, belong to no exclusive section, but may be equally borne by the artisan, the merchant, or the wearer of the coronet, and that it is to the man we must look more than to his title or station in society.

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"The rank is but the guinea stamp;
The man's the gowd for a' that.
A king can mak a belted knight,
A marquis, duke, and a' that;
But an honest man's aboon his might,
Guid faith, he maunna fa' that!
For a' that, and a' that,
Their dignities, and a' that
The pith o' sense and pride o' worth,
Are higher ranks than a' that.

MEETING HELD JAN. 31ST, 1873.

The President announced that H. M. Hamilton, Esq., O.M., had been elected an honorary member; H. C. Glyn and W. Flux ordinary members, and that the election for the vacant place in the committee would be on the following Monday. He added that the subscription would in future be 2s. a term, and that another edition of the Antiquities of Marlborough, 1000 copies, had been printed. He then proceeded to give a lecture on the skull of the elephant; after which F. E. Hulme, Esq., F.L.S., F.S.A., gave a short description of the process of wood-engraving.

The President then exhibited two bottles of water, one from the Jordan, the other from the Red Sea, and a specimen of the Virgin's Hand (*Anastatica Hierochuntina*) presented by J. E. Pierson.

There were 25 persons present, 3 Hon. Mem., 15 Mem., and 7 visitors.

MEETING HELD FEBRUARY 28TH, 1873.

The President announced that T. G. Balfour, W. M. Grove, and A. E. Garrod had been elected members.

The Rev. A. Babington then gave a lecture on "Wayside objects."

The President exhibited a specimen of Venus's Flower Basket (*Euplectella speciosa*), and gave a short account of Sponges. He also exhibited a saw of the Saw-Fish (*Pristis antiquorum*), presented to the Society by the Rev. F. W. Farrar, F.R.S.; a Roman Coin from the palace of the Cæsars at Rome, presented by F. G. Eyres, and a French coin called a "Getter," on behalf of the Rev. F. W. Farrar.

There were 28 persons present, 3 Hon. Members, 17 Members, and 8 Visitors.

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MEETING HELD MARCH 4TH, 1873.

The President made some remarks on the new arrangements concerning the Meetings of the Society, mentioning that for the future Members would be elected on probation for a term, announcing that R. A. Farrar and H. C. Legh had been elected Probationary-Members; he then gave a short account of "Fungi," exhibiting several specimens.

J. R. Dudding exhibited a Snake's Skin, the President specimens of Vegetable Ivory and Coquilla Nut, on behalf of A. W. Flux.

There were 24 persons present, 1 Hon. Member, 19 Members, and 4 Visitors.

MEETING HELD MARCH 28TH, 1873.

The President exhibited a specimen of the Velvet Scoter from Dorsetshire, presented by J. H. Garland; also a specimen of an Ascidian, sent by the Rev. C. Soames: other exhibitions had to be postponed through want of time. G. F. Rodwell, Esq., then read papers on "The Discoveries of Archimedes," and "On the Perception of the Unseen."

There were 44 persons present, 3 Hon. Members, 20 Members, 1 Associate, and 20 Visitors.

ON THE PERCEPTION OF THE UNSEEN.

We are perpetually reminded of the fact that our senses are limited in their capabilities of observation and examination. The very use of such instruments as the microscope, telescope, and spectroscope, furnishes the proof of this. For the minute study of the Universe we have to assist and exalt the capabilities of the senses by means of suitable instruments:—the star depths cannot be penetrated by the unaided eye; nor the structure of the diatomaceæ,—nay the diatom itself, perceived; while the lines of the spectrum would have for ever remained undiscovered had it not been for the prism, and the tutored eye of Fraunhofer. We are perhaps too apt to forget that the senses are devoted to our organisms: in all that concerns the body to which they belong they are perfect; but when leaving the direct requirements of the organism, we call upon our senses to examine the phenomena of the external world we find at once that their capabilities are finite. Thus, if we may so express it, there are sounds which the ear cannot hear, light which the eye cannot see, heat which the nerve of touch cannot feel. I mean there are actions precisely similar in kind to those which constitute ordinary

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sound, light, and heat, which do not affect our senses; and the difference is only one of degree, not of form. The difference is no more than this: suppose a railway train passes us with such a velocity that we can distinguish the face of a friend in one of the carriages, and now suppose the velocity increases until we can no longer distinguish him; we have here difference of degree only. The motion is the same in kind, and in direction, but it differs in degree; and that just makes the difference between recognising our friend, and not doing so. It is the same with the motions of sound, heat, and light. Let them pass a certain well defined limit, and we cease to recognise them by the unaided senses. Let the number of aerial vibrations constituting what we call sound, exceed 38,000 in a second, and we cease to hear any sound at all. Let the number of ethereal vibrations constituting what we call light, exceed 699,000,000,000,000 and we cease to see any light at all. Yet vibrations of air exceeding 38,000 in a second, and vibrations of ether exceeding 699,000,000,000,000, exist, and do not less powerfully influence matter, than the vibrations which our unaided organs of sight and of hearing can recognise.

More than this, the senses may deceive us. Take the following most familiar experiment as a proof: we place three basins in a row, pouring cold water into the left-hand one, hot water into the right-hand one, and a mixture of equal parts of the hot and cold water into the central one; if we now dip our left-hand into the cold water, and our right-hand into the warm water, and simultaneously remove them and place them in the central basin of luke-warm water, the latter will feel warm to our left-hand and cold to our right-hand. Here then we have two absolutely antithetical sensations communicated to the brain, through similar sets of nerves, by the same medium. Are we to believe the evidence of the right-hand, or of the left, or disbelieve both? The old story of the man who cooled his porridge, and warmed his hands with the same breath, is equally to the point. We have to recognise the fact that many actions as interpreted to us by our senses are *relative*, not *absolute*. The interpretation of an external action by any particular sense; the transmutation of the external impression, into an impression capable of being recognised more or less readily by the brain, often involves this process of relativity; this conveyance by the mind of the idea only in association with some other more or less cognate idea. The sifting of the absolute from the relative is by no means easy. This we have to attempt by diverse modes of thought, logical processes, ordered mental actions, and in the case of the investigation of the world external to ourselves by the employment of certain aids of the senses, side by side with aids of the understanding.

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In the study of nature there are many unseen actions which it behoves us to visualise, if we can, in our mind's eye. This has ever been the case in Natural Philosophy; the motion-giving *Αἰθὴρ* of the Ancients, the *ὅμοιομεραιαι* of Anaxagoras, the vortical motion of the *Materia cœlestia* that Descartes has so laboured to make us comprehend by his oft-repeated woodcut, the igneous motion "gyratorius seu verticillaris" of Stahl:—have not the authors of these one and all tried to bring the things before our eyes? And have not the proposers of "subtle-essences," attractive and repulsive "fluids," polarised media for the conveyance of force, striven to do the same? to save the conception from being a dry metaphysical dogma, unrecognised by other than mental means, and to quicken it, and fix it in our memories by some image, however crude, drawn from the obvious and more material world about us, and from familiar actions and events in that material world? In those very actions of which we have spoken,—sound, heat, light,—do not we try to realise each phase of their existence, from their generation, to their ultimate rest in the brain?

Let us now endeavour to visualise some unseen actions which often take place around us, such as the reflection of what we call light from polished surfaces, the assumption of heat by a body, the reception of a sound by the brain.

Before we can do this we must have a suitable observing instrument, and here the reader must grant us a few concessions. We must at the outset dispossess ourselves of our bodies, retaining only an eye associated with our usual powers of thought. We require a complete instrument of vision, not an organ which can be directed to one point only at a time. Then let our eye revolve with infinite velocity in a circle, and let the circle rotate upon one of its diameters. A sphere whose surface consists of eyes will be the result, and let this be our instrument of vision; and let us call it for the avoidance of repetition the *Oculus*, and with it travel through space. Grant also to the *Oculus* power of contraction to the size of an atom, expansion to the size of the sun, infinite velocity in every direction, faculty of seeing in the dark, of distinguishing the most rapid motion, of seeing the imagined but unseen, of penetrating where the ether can penetrate, and becoming when it so pleases an atom of ether itself, and we have a most suitable instrument of vision; an all-powerful eye, as potent as the winged eye which ever hovers over the head of Osiris, and sits above him in the Hall of Perfect Justice, when the heart of the deceased trembles in the balance, lest being weighed it should be found wanting

Here is a little ingot of polished silver; let us magnify it a few billion times, until for example, it is as large as Mont Blanc, and enter it as the *Oculus*. We must make ourselves as small as possible and perfectly elastic,

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or we shall be pounded to bits, or at least bruised, for we are surrounded by little atoms of silver about as big as peas, which are whirling round and round exceedingly quickly in circles about ten feet diameter. Soon we perceive the velocity to augment; the circles to become larger, the mass no longer preserves its shape, it has settled down into a large lake of glowing molten silver. Still the motion increases, (or as we should say the silver is heated yet more); suddenly the atoms whose velocity has now become terrific, leave their circular path and fly off tangentially into space, oscillating rectilineally with an amplitude of ten thousand feet; a great greenish cloud of silver gas now floats high above the *Oculus*. The rectilineal motion slackens, the atoms approach each other, at length their cohesion begins to act, and compounds its own rectilinear action, and the motion of the atoms into the former circular motion; the cloud condenses, spherical and ellipsoidal masses as large as the dome of S. Peter's fall, and solidify in a ravine into a lengthened mass of the metal. Once more the *Oculus* enters, and finds the atoms actuated by their ceaseless circular motion. Looking towards the far end of the mass, it sees the inception of a new motion, the particles are assimilating an elliptical motion, and are also oscillating in a somewhat altered plane, the action travels quickly from end to end of the mass: it is conveying an electric current. The atoms already possessing this elliptical motion, now gradually assimilate a peculiar helicoidal motion in varying planes; the mass is under the influence of a magnet. The *Oculus* goes outside, and stands at the foot of one of the ridges formed by the condensed metal; it looks up at the bright lustrous surface, and sees the ether waves dashing down from infinite space upon the surface, it sees too that the motion differs from that of the atoms, they cannot assimilate it, the ether waves dash back like great sea waves retreating from a rocky shore; in a word they are reflected, and to some extent scattered in ether foam. Once again the mass of silver is placed with sulphur in a crucible: the *Oculus* remains at the bottom of the crucible and watches: motion is assimilated by the atoms, more quickly by the sulphur atoms than by the silver atoms; at length a yellow spherical atom of sulphur, and two black atoms of silver rush together, coalesce, move to the bottom of the crucible, and continue a circular motion in their united form, (the three now acting as one), altogether different, both in kind and in velocity from that of the single atoms, and this goes on until an atom of sulphur has been assimilated by each two atoms of silver, and such has been the alteration in their several motions, that the *Oculus* no longer recognises either the silver or the sulphur as separate bodies; the little compound molecules now form to all intents and purposes a new substance.

And here ends the first voyage of the *Oculus*. What have we seen? We have tried to visualise the assumption of heat by a little mass of silver,

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and its subsequent fusion, gasification, and condensation; its conveyance of an electric current; the action of a magnet upon it; its reflection of light; its union with sulphur under the influence of chemical affinity.

Where shall we travel now? To the fiery maëlstrohms of the sun? to the zone of Saturn? to a cloud of planetary matter condensing into a new world? or shall we float with the light of Arcturus and α Lyræ through the spectroscope of Mr. Huggins?

Let us rather visit with the *Oculus* those unknown regions in which perception itself originates. Let us swim with a sound wave into the ear, and with an ether-wave into the brain itself.

Here then we find the *Oculus* within the dim porches of the ear, tapping upon the tympanum; it passes through it and finds itself among those complicated little bones the *malleus*, the *incus*, and the *stapes*; they move with the vibrations of the tympanum, and appear to be transmitting them. The *oculus* sees below it a deep yawning pit, the *Eustachian tube*; it looks through the *fenestra rotunda* and floats through the *fenestra ovalis*, into the *perilymph*—a clear liquid mass agitated by waves,—through the labyrinth and cochlea, into the endolymph, to the Cortian fibres.

Here once more is the *Oculus* in company with an atom of ether violently bombarding the eye. It enters the organism by a gate of horn—the *cornea*; it enters the brain by a gate of ivory the optic foramen:—

> "Sunt geminæ Somni portæ, quarum altera fertur
> Cornea, ...
> Altera, candenti perfecta nitens elephanto."

Having passed the aqueous humour it finds an increase of resistance as it enters the lens, and emerges into a great vaulted chamber filled with a substance as clear as crystal. Impulses are speeding through this with extreme velocity; and delivering their message to the retina. The *Oculus* reaches the optic nerve, the particles of which are vibrating under the influence of the motion of the ether-waves, and it floats between its fibres into the brain itself. But here it sees no more. In vain it strives to comprehend how the delicate impulses of the ether become transmuted into the wonderful sensation of light; how the images of the external world are recognised by the centre of perception. Although within the chambers of the great domed palace, the *Oculus* can understand but little of its inner life. It is somewhat reminded of a telegraph office, clerks are perpetually hurrying in with messages, and others are as rapidly hurrying out with received messages. The most distant nerves conveyed messages and received back answers, whereupon resulted bodily motions. Thus the will said "I want to move the arm," and the brain having given the necessary directions, the arm moved. It was apparently a kind of central office to which every action was referred before being executed, no muscle

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or nerve ventured to act upon its own account, without leave from head-quarters, which once given, the whole bodily system forthwith responded. Perhaps the heart was most frequent in its demands. Then said the will, "I wish to read aloud;" and the brain at once commenced to receive communications, and to issue orders in various directions: there were the muscles of the arm to be attended to in order that the book might be held at the proper distance from the eyes; and the muscles which cause the eyes to move horizontally from the beginning of a line to the end of a line, and vertically from the top to the bottom of the page; and the agitation of the particles of the optic nerve conveying the impression of the letters had to be received, and then made known to the muscles of the larynx, and the muscles of the tongue, and the muscles of the lips, and the respiratory muscles, and all their auxiliary apparatus; and thus the words seen by the eye came to be spoken by the mouth, and the organism performed the act of reading aloud. Now it so happened that the organism had willed the reading of Descartes' *Principia*, and the reading had brought the words to the following passage:—"And this is the best mode of discovering the nature of the mind, and its distinctness from the body: for examining what we are, while supposing, as we now do, that there is nothing really existing apart from our thought, we clearly perceive that neither extension, nor figure, nor existence in any place, nor anything similar that can be attributed to body, pertains to our nature, and nothing save thought alone; and consequently, that the motion we have of our mind precedes that of any corporeal thing and is more certain, seeing we still doubt whether there is any body in existence while we already perceive that we think."—The reading now ceased, and the will somewhat peremptorily asked the brain the meaning of this passage. Whereupon the molecules of the brain became strangely agitated; they moved in wonderful planes, they disported themselves in curved space, they described in their motions space of four dimensions, they moved in vortices which rolled over each other, and the whole organ was in a state of the most profound activity. *Was this thought?* At least the will received no direct interpretation of the Cartesian passage, and having requested the brain to cudgel itself no more, the subject was dropped, and the reading continued. After a while this became monotonous, and the *Oculus* floated out of the organism.

Then the *Oculus*, small as an atom of ether,—for had it not entered on an ether-wave?—began to increase in size; after enormous expansion it is as large as a pin's head, in the course of time it becomes as large as a pea, then as large as one's head: then it gives up the violent revolutionary motions before described; and lo! we behold our own two eyes set in our own head, and in a very sleepy condition; and we begin to realise the fact that we have been dreaming, and that our dreams have been of things "imagined rather oft than elsewhere seen."

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MEETING HELD MAY 9TH, 1873.

The President announced that C. F. P. Froom, C. Colville, C. F. Jacson, and N. Manders had been elected Probationary Members.

A discussion then ensued as to the Field-days to be held, when it was decided that there should be, if possible, one to Ramsbury on May 17th, one to Bedwyn on June 28th, and one to Binck-Knoll on July 19th.

The President then exhibited a specimen of a Rook with a singularly elongated upper mandible, and some coins of Edward the Confessor, William I, Henry VII, (two issues), and Henry VIII. J. H. Sanderson exhibited some relics from the wreck of the "Royal Adelaide," H. S. Sankey, some antique documents; and G. C. Mansel, a peculiarly small guinea-fowl's egg.

There were 27 persons present, 2 honorary members, 21 members, and 4 visitors.

MEETING HELD MAY 23RD, 1873.

The President announced that F. G. Heaven had been elected a Probationary member, and that in consequence of some irregularities connected with the Museum, it would henceforth be open only at specified times. The Master then exhibited some Phylacteries, (which he afterwards presented to the Society), and explained their history, construction, and use. He further presented a specimen of Encrinite, and of some pieces of Sèvres china, from St. Cloud, near Paris. At the commencement of the Revolution in 1848, the mob threw all the ornaments out of window: at first no notice was taken of the fragments, but it was soon found that the gilding on them was so thick that it was found worth while to separate the gold, and guards were then posted to prevent any more of the fragments from being taken away.

C. Colville exhibited two five-franc pieces, of the time of the 1st Revolution; C. F. P. Froom, a silver penny, half-penny, and farthing of Queen Victoria, which he afterwards presented to the Society; and R. Farrar, a gold Persian coin and a box made of birch-bark and worked with the hairs of the moose deer.

The President exhibited a monstrosity of a lamb, presented by Mr. Rowe, and specimens of orchella-weed and lac dye, presented by C. W. Houghton (O.M.)

There were 28 persons present, 4 hon. members, 17 members, 1 associate, and 6 visitors.

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MEETING HELD JUNE 6TH, 1873.

G. H. Cremer, Esq., was elected an Honorary member. *Exhibitions*: A fasciculated branch of the Damo's Violet (*Hesperis Matronalis*) by H. S. Sankey; a five-guinea piece of William and Mary, by C. Colville; a penny rolled out into a long ribbon, by R. Farrar; Indian shoes by C. H. Alexander; American coins by C. F. P. Froom; a medal to commemorate the murder of the Duc de Berry, by the Rev. F. W. Farrar, F.R.S., and a cast of the pyloric end of a boy's stomach in coagulated milk, by Dr. Fergus.

The President then gave a short account of the manufacture of Thermometers.

There were 26 persons present, 1 hon. member, 18 members, and 7 visitors.

MEETING HELD JUNE 20TH, 1873.

The President announced that the Field day on Saturday week would be to Binck-Knoll, and not Bedwyn, in order to enable some O.M.'s to attend it.

He then exhibited 5 cases of Indian moths, presented to the Society by Capt. R. B. Reed (O.M.) and which had just been properly arranged. C. Colville exhibited coins of Elisabeth, Edward VI, and James I.; C. F. P. Froom some skeletonised leaves and *Lycopodium* from India, and presented Romer's "Natural History" to the Society. T. G. Balfour also presented Knagg's "Lepidopterist's Guide." The President then exhibited a preparation for the microscope of macerated straw from the stomach of a young bird. This formed part of the contents of a very young bird which had been washed out of its nest and had been examined by Dr. Fergus, who found that almost the entire contents of the stomach, young as the bird was, consisted of fragments of beetles.

There were 31 persons present, 1 hon. member, 19 members, and 11 visitors.

MEETING HELD JULY 11TH, 1873.

The president announced that in consequence of some irregularities in the behaviour of the members and their friends at Binck-Knoll, there would be no more Field-Days open to all the Society; and gave notice that an election for the various officers of the Society would be held on Friday. He also

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announced that A. D. Smithe and P. B. Smithe had been elected Probationary Members.

F. E. Hulme, Esq., F.L.S., then exhibited a collection of objects of archæological interest that had been presented by *J. E. Pierson*, and made the following remarks on them.

Though the present collection is small, it contains many fragments of sufficient value to render it very interesting and instructive; as the things however owe their value rather to the associations they evoke than to their inherent worth, a few words of illustration and reference to the history they suggest may not be amiss. In this piece of granite from the Apis pits we are reminded of the polytheism and symbolic worship of the ancient Egyptians, the sacred bull Apis, like the bull of India dedicated to Brahma, being regarded as the personification of one of their higher deities, great Osiris, the judge of the actions of men, the rewarder of the guileless, the avenger of the wronged. On the death of the sacred animal his remains were carefully embalmed and borne to their resting place amidst the lamentations of a nation from whom their deity had for a time at least withdrawn himself. In this fragment from the Coliseum at Rome, the great amphitheatre of Vespasian is brought before us, a work that, left unfinished at that Emperor's death, was continued by Titus, who employed on it vast numbers of Captive Jews after the destruction of Jerusalem. It is an ellipse in plan, being 615 English feet long, and 510 feet broad, covering an area of five acres and a half, and capable of accommodating 80,000 spectators. Other famous amphitheatres may be seen at Verona, Nismes, Pœstum, and Pola, but that of Rome is at once the oldest, the largest, and the finest. Here the gladiatorial combats were held, here the Christians were thrown to the lions, here in later times the pilgrims journeyed as to holy ground, a spot of most sacred memories, and here too, unfortunately, in still more recent days flocked all those who on building intent were in search of materials. In this piece of asphalt from the Dead Sea we are struck rather by the curious natural product than by its historic associations, though we remember that Josephus speaks of its collection in his time, it being used for caulking ships, medicinal purposes, and as one ingredient of the incense of the Temple: it was also largely exported into Egypt as one of the necessary materials for embalming. Pococke, Shaw, Seetzen, Buckhardt, Van Egmont, and Heymann, who have written on the Holy Land, are none of them able clearly to define its nature, some affirming that it is a volcanic product thrown up from the bottom; others, that it oozes from the clefts of the rocks that bound the eastern border of the lake. At sight of this small slab of marble from the catacombs of Rome we recall those dark days of the early Christian Church when its members found in the subterranean quarries of the city a refuge while living, a resting place at

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death; we have however in our paper on symbolism, and in the course of our remarks in the archæological catalogue dwelt at some length, both on the history of the catacombs, also on the theology of the Egyptians, and the destruction of Pompeii, now suggested by these fragments of lava before us from thence. In our remarks on Mosaic, a subject of which we are again reminded by these fragments of tesselated pavement from Jerusalem, we have already said all that need be said, it does not therefore seem desirable to go into several of these matters at the length that might otherwise seem desirable. We have here a small fragment decayed off the great Sphinx. The Sphinx rises from the desert sands not far from what is termed the second pyramid; it is carved from natural rock, except a portion of the back and fore legs where the rock was defective and hewn stone was employed. At its base, when the ever accumulating sand was cleared away, was found an altar, and a tablet representing king Thothmes IV, offering a libation. Pliny in his writings gives its measurements as follows; from abdomen to highest point of head, 63 feet; length, 143 feet; circumference of head round the forehead, 102 feet. The Arabs hold it in great dread, calling it Aboolhol, the father of terror. It is curious that the sphinx, an allegorical and composite figure, is with the Egyptians, always male, and never winged, while with the Greeks, it is always winged, and always a female figure. The Egyptians besides the more ordinary figure having human head and leonine body, occasionally had others hawk-headed, ram-headed, &c., these various forms have their distinctive names and attributes, and are known to archæologists as the andro-sphinx, crio-sphinx, hieraco-sphinx, &c. The specimen before us is interesting from the large size of the organic remains it contains; at what early history of the world these shells had their living inhabitants, who shall say? In the midst of our mutual congratulations on the greatness of our present days, it is well perhaps to reflect upon the very small part we play in the great drama of life. The earliest buildings in the world, and the largest, are the pyramids; the earliest Egyptian King, of whom we have authentic knowledge, reigned sixteen hundred years before the Christian era, that is to say, rather more than 3,400 years ago, and the pyramids are known to have been standing there in his time, though the memory of the builders, all except the names of the monarch who caused them to be built, had even then passed away; there is however one curious little fact that will take us back immensely farther than this, and causing the hoary pyramids themselves to be but as of yesterday in comparison: the limestone used is full of little shells, thus dating back to an era that our minds fail to grasp, and finite time, despite the millions of men that have performed their little parts since then, is dwarfed and fades away before the infinite past.

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Though there are several other minor matters on which we could have wished to dwell, we would only now in conclusion call your attention to the following fragment from the so-called Pompey's Pillar. This Pillar stands on the Egyptian shore of the Mediterranean, its height is 88 feet, its capital of the Corinthian order. The shaft is one solid block of red granite 64 feet long and over eight feet in diameter, the pedestal and capital are very inferior in workmanship and material to the shaft. The Arabs, believing that no one would take so much trouble except to conceal some treasure, have injured the pedestal a good deal in their attempts to blow it up, but on the occupation of Egypt by the French, the damage was in great measure repaired. An inscription now almost illegible, records that one Pontius or Posthumus, prefect of Egypt, and the people of Alexandria, erected the pillar in honour of the Emperor Augustus, hence the use of the name of Pompey, though applied to it for hundreds of years, is no longer defensible. On the entry of the French army into Egypt, a numerous body of learned men accompanied it with the especial object of examining and collecting the antiquities; these savants however after close investigation decided that the inscription owing to the ravages of time and weather, and the wanton injury of man, was hopelessly lost, and the credit of its deciphering must be given to three of our own countrymen, who by a daily observation of the pedestal for the few moments that the shade cast by the mutilated letters rendered them somewhat more distinct, were enabled at length to terminate an error that for more than five hundred years had existed, and to demonstrate that the name the monument had so long borne was a misnomer. Since writing these few remarks the following passage from the *Times* (June 19, 1873) has attracted our attention. Its interest and importance we think fully justify us in reproducing it.

Preservation of Monuments in Egypt.—At the close of the tourist season in Egypt an influential deputation of travellers waited upon his Highness the Khedive to pray him to take measures for the preservation of the temples and other historic monuments on the Nile. The address briefly points out the dangers to which the monuments are subjected and adds some practical suggestions as to how these dangers may be met. The defacements and depredations of travellers, as usual, are quite as much to be feared as the ravages of time. Choice specimens of hieroglyphics are daily broken away and carried off, and everywhere the eye is offended by the modern mania of mural scribbling. Recently three travellers were observed to mount on the head of the Great Sphinx and deliberately chisel off a large piece from one of the ears. The nose has gone long ago, and now there seems a fair chance of its being followed bit by bit by all the other features, and the world will have nothing but a mass of stone in the place of one of its grandest monuments. Other dangers, too, menace Egyptian antiquities. Although the dry climate

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gives to the granite masses almost eternal life, foundations here and there have yielded, and a disastrous displacement is impending in many places. The fate of the cornice of the small temple at Philæ depends on one large stone, already out of place; and some of the superb columns of the great hall at Karnak are being undermined at their base by the yearly rise of the Nile. The address suggests, as remedies for the dangers of which the above are but examples, that a custodian be kept at each important ruin; that an entrance fee be levied by him, and the funds thus raised be devoted to the preservation of the monuments; that printed rules be posted at each entrance, and that penalties be enforced. The address, in fact, proposes that Egyptian ruins be subject to the same superintendence as is, for instance, maintained at the ruins of Pompeii. His Highness received the address very graciously, and it is believed that steps will be taken for the preservation of the temples before next winter; but it is probable that the expense will be met by a grant from the Egyptian Treasury rather than by a tax levied on the foreign visitors, who contribute so much to the general prosperity of the country.

Some alterations, chiefly verbal, in the Rules of the Society, proposed by the Committee, were put to the vote and carried with one exception.

There were 43 persons present, 2 Hon. Mem., 26 Mem., and 15 Visitors.

MEETING HELD JULY 18TH, 1873.

After the voting had taken place, the President announced that the following had been elected officers of the Society for the ensuing term. W. M. H. Milner, Secretary; W. R. Grove, Librarian; Rev. A. Babington, J. W. Dudding, and S. F. Townsend on the Committee.

C. Colville exhibited a five-franc piece of Louis XVI; the President a monstrosity of Thistle and a mummified Jackdaw; H. S. Sankey a slave whip; and F. E. Hulme, Esq., F.L.S., a plate of Tiger moths which he had kindly drawn for the Christmas Report.

There were 41 persons present, 3 Hon. Mem., 23 Members, and 15 Visitors.

C. E. Vaughan read the following account, written by the Rev. J. Sowerby, of

A WALK ACROSS THE KARST.

Driven out of the Tyrol by the snow, I crossed the Monte Croce pass, and went by Tolmezzo, and Udine to Venice. I spent two days visiting the wonders of that city, and on Tuesday evening, June 3rd, I embarked at midnight for Trieste.

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The steamer, (Austrian Lloyd) was very much more comfortable than the boats from Newhaven to Dieppe, a passage of corresponding length.* The Northern Adriatic is very stormy, and even dangerous when the N. E. wind (Bora) is blowing, but we were favoured with an exceptionally calm night. I purposely refrained from regularly going to sleep, in order to witness the sunrise. When I went on deck at 3.45 we were about half-way over. The sky was bright with the coming dawn.

The mountain ranges were dimly visible in a curve extending from S. E. almost to N. W. The light rapidly grew brighter in the E. The smoother parts of the water became like streams of gold in an ocean of blue, about 4.15 the sun shewed above the mountains in front, but his rays filled the air with a delicate haze, which made the view yet more indistinct. About five, the smoke of the city of Trieste was visible at the foot of the Karst, and at 6.30 we were along-side of the Mole S. Carlo. At the Albergo Daniele I found there was no hope of getting breakfast till eight. I strolled about the lower town to wile away the time. The markets were already full of finer fruit than I ever saw on the continent. Nearly every shop had its cat basking at the door. After breakfast, I started for a walk, northwards along the coast, botanising as I went. The road ran close to the water, and as there is only a very slight tide, (not exceeding two feet), it was more like walking on a lake side; about five miles from Trieste, I came to the chateau of Miramar, belonging to the ill-fated Maximilian. It is beautifully situated on the Punta Grignana. After walking through the gardens I ascended the hill behind by a steep and stony path amongst the vineyards to the village of Prosecco, and returned by the high coast road, having beautiful views over the Adriatic, Trieste, and the mountains of Istria.

Next morning I followed the high road leading in-land, this overcomes the ridge rising above Trieste by a winding course of about five miles, and when not far from the summit, and in view of a building which looked like a fortress, I struck off up the hill by a steep path, and in half-an-hour reached the crest of the ridge; here I had my first view of the Karst, that remarkable limestone region, which extends in length from Gorz to Fiume, not less than 60 miles, and must often be 30 broad. Nowhere in Europe is it found on so large a scale. I believe that caverns are only found in limestone, unless produced by erosion, or artificial means, and consequently they are found here of a very large size, that of Adelsberg being by far the largest known in Europe, exceeded only by the Mammoth Cave in Kentucky, and some others in America.

* The fore-cabin contained no less than 16 sleeping berths, beside the usual sofa accommodation, and was at least 12 feet wide at the broadest part.

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The valley upon which I looked was only a few hundred feet below me, and perhaps three miles in width, and bounded on the opposite side by a ridge similar to that on which I stood. Its aspect was singular in the extreme, nothing but grey stone covered with a scanty vegetation. Occasionally where more soil had accumulated a few stunted trees were growing. Here and there man's labour had cleared the ground of the loose stones, and made walls of them round patches pretended to be meadows, with hardly a square yard of level ground and where thistles were more conspicuous than grass. I descended about a mile into the valley and then returned by another short cut over the ridge to Trieste. In these two days I found about 250 different plants, about 60 of which were new to me. I was most pleased at finding the blue pimpernel *(Anagallis cærulea.)* I saw it in three or four places, in one case growing close to the red. It is found in England but I had never seen it. Next morning (June 6th) I started to walk over the Karst to Fräwald. I left the hotel at 6.30, but in spite of having studied the map of Trieste, I missed the road I meant to follow and was at last thrown back after wasting nearly an hour upon the highroad I had followed the day before. At the crest I found that my supposed fortress was an excellent new hotel, where I should have much preferred stopping, as Trieste was both hot and noisy. On the way from Obcina to Sessana, I noticed more than yesterday the peculiar feature of the district. Every portion of it is honeycombed, covered with pits of all sizes from 10 feet in diameter to half a mile, and of corresponding depths; as the surface water escapes by these pits (locally called Dolinen), there is more moisture in them than elsewhere, trees flourish better, and not unfrequently a small patch of corn is visible at the bottom. Generally, though the sides are very rough and stony, it is possible to descend into them at any point. I saw one however at Divazza whose sides were perpendicular for at least 70 feet, and where a descent was possible at only one or two places. I suppose that the upper layers of limestone rest very irregularly upon the lower and that in many cases where the upper layer was not supported, it has fallen in. In several cases they afford entrance to caverns and probably all if they were examined would be found to do so. In the villages the fountains with which we are so familiar are replaced by large wells to receive the rain water from the neighbouring ground which is paved or puddled, to prevent its absorption. The road winds round the large Dolinen when it cannot avoid them and crosses the small ones on embankments. I reached Sessana (the fourth station on the line from Trieste to Vienna and about 24 miles from the former) about 10 o'clock. While taking some refreshment, I fell into conversation with a gentleman from Trieste, who was staying at the Inn. On hearing that I was going to visit the grotto of Adelsberg, he told me of a cave about four miles off near Corgnale, where the forma-

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tions exceeded in size and beauty anything in the Adelsberg cave. He was kind enough to accompany me part of the way to a rising ground whence he pointed out the position of the cave and village. He said that on arriving near the cave I was to send the first peasant I met to fetch the guide, and posted me up in the Italian phrases I was to use. As it turned out I met no one, and on arriving at Corgnale found a man that spoke German. The guide was soon found, and after retracing the route for nearly a mile, we turned off the road to the right, and in a few minutes came to a pit down which there was a flight of steps, and a wall built across about 20 feet down. It was curious to see nothing but inky blackness over the wall and you could almost fancy that after passing through the door you were going to step into space on the other side. However the steps continued, and after descending some 30 feet more we lighted six candles. Three were placed in a rude chandelier, the guide held two others and I took the last. Very little of our progress was horizontal. A series of rude and irregular stairs, with occasionally a bit of level, brought us to the bottom at a depth of not more than 500 feet. There were some very fine curtains, waterfalls, &c., and one particularly fine stalagmite, about 30 feet high for which he said an Englishman had offered 10,000 gulden (about £900). There was only one hall of any size, perhaps 40 feet every way, which he called the 'Tanz-saal,' I suppose in imitation of the Adelsberg cave. We left a candle about half-way down which was visible from the bottom of the cave like a star. I ought rather to say, the end of the steps, for the cave continued as far as our miserable light allowed us to see. The guide said the commune was too poor to extend the path. As far as I could make out the receipts from visitors did not exceed £5 a year, and I thought the commune had better have accepted the rich Englishman's offer if ever made, and applied the proceeds to improve and explore the cave. It was impossible to make any comparison between this and the Adelsberg grotto, as our lights were totally insufficient here, having only six, whereas I saw the other fully lighted up. On our return the light of day appeared under the gloomy entrance arch with brilliant effect, from a depth of more than 100 feet, and in this respect the exit was far more impressive than from that of Adelsberg. They charged 10 kreutzers for each candle, and my expenses for guide, messenger and lights were 1 gulden 40 kr. (2s. 6d.) I reached Corgnale again about 4. Between this and Divazza the country was even more stony than before—I could sometimes fancy I was walking through a churchyard filled with fantastic stone monuments. Between Divazza and Senosetch, I was sorely puzzled by my map (Mayr's Alpenländer, sheet 6) which laid down a postroad where there was none. The date of publication is 1872, and I already have observed postroads which have been in use in one case since 1864 and the other since 1860 unmarked while the old line of road

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is coloured. I reached Senosetch at 7. Here I joined the main road and struggled on to Prāwald at 8. Next morning I ascended the Nanos (4251) a mountain famous for flowers, but with only small success. We found however the wild peony, a far prettier plant than the over gaudy flower of our gardens. We found no water on the mountain, except rainwater in a stone trough. The plateau at the summit, covered with wood and intervals of short velvety grass, reminded me of the top of the Ballyfluk. Abundance of deer are found on it. My guide said he had shot as many as 20 in one autumn. He knew the names of very few flowers, but all of them by sight, and never ceased lamenting their scarcity owing to the lateness of the season. The mountain is much visited by botanists and he said he had much occupation in forwarding specimens to Innsbruck, and Vienna. In the evening I went by the 'eilwagen' to Adelsberg.

The following paper has since been received from the Rev. J. Sowerby:

THE LUSCHARI (HEILIGE) BERG IN CARINTHIA.

LIENZ, June 24th.

It is now exactly six weeks since I left England, and in some respects my tour differs from any of the previous thirteen which I have made since 1859. I have not once been more than 7000 feet above the sea. I have never been up at 3 a.m. except when I have been up all night: and never even risen at 5 a.m. except when I had to catch a train. Stranger still it seems to me that I have not walked 5 miles during the past week and that I do not feel sure if I shall walk again this summer for a reason which will appear presently. Last Tuesday (June 17) I left Tarvis at 7.45 a.m. for Pontafel intending to cross the Nassfeld to Hermagor the next day in search of the Wulfenia. Ten minutes after starting a conical summit came in sight on my left hand, surmounted by a church and several white buildings. This I knew to be the Luschari (or Heilige) Berg and the church on it one of the most famous pilgrimage shrines in Carinthia, and indeed in the Austrian dominions. Its foundation dates as far back as 1360. In that year (so the legend goes) a shepherd found an image of the Virgin Mary on the top of this hill, which he conveyed to Saifnitz in the valley below. Next morning it had disappeared. It was found again on the summit, was again brought down and disappeared as before, to be found a third time on the top. This was taken to be a plain intimation of the Divine will: money was collected, a church was built on the spot to receive the image, and was soon frequented by numerous pilgrims. The annual number is said to be not less than 20,000; and in the summer of 1860 the 500th anniversary the number rose to 102,000. I was not quite decided about visiting it

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but as I reflected I had only 14 miles to walk to Pontafel, and that it would not add more than four hours to my day's work, I determined to go. About half-a-mile from Saifnitz, the figure of an angel on a pillar pointed out the way to the "Holy Hill." I had not gone a hundred yards before the necessary concomitants of so frequented a spot began to assail me. First an old man who had made for himself a comfortable and cool seat in some bushes started up with a chant of mingled praise and supplication. Next an old woman asleep on a bank awoke just in time to repeat a similar formula. Presently I came to a group of 5 or 6 houses. Every one had a bundle of shavings swinging over the door intimating their readiness to take the pilgrim in, one old man in a very small hut had a large pot of soup boiling, and I was earnestly pressed to stay and partake of their good things. Then I had half-an-hour's peace, whilst the path rose steadily and pleasantly through a wood. Just before quitting this for some pasture land which was approached by a stile, I saw something on a seat beside the stile which looked like a doll's house. A nearer approach shewed it to be a Kirchlein (little church); a box about 2 feet square and one deep was painted to represent the front of a church. It had a practicable door and on the top were two turrets, each with a window. In each turret there hung a bell, about twice the size of an ordinary door-bell, the strings by which they were worked coming out at the front door. The proprietor (or manager) happened to be absent, but on a board which formed the platform was a tin box with a hole in the top to receive the contributions of the faithful. I admired the implicit trust of the owner in the honesty of the passers by. I should have been afraid that if the box felt heavy it might be abstracted by some less conscientious pilgrim. In the middle of the grass land stood a chalet, and immediately beyond I came upon another Kirchlein with an old man dozing beside it and an old woman mending his hat. Becoming aware of my approach, the old woman gave the old man a push; he woke up, rushed to the Kirchlein and off went the bells in as noisy a peal as they could, whilst they both kept a monotonous appeal to my charity. Hitherto I had seen more beggars than pilgrims but the number was soon equalized by a group I met coming down. I was nearly half-way up when to my astonishment I came on the snow, which hence-forward was continuous till within a short distance of the top. The walking became much more unpleasant, as it was sometimes soft and sometimes slippery. However there were neither beggars nor Kirchleins. The height of its lower edge above the sea would be about 4000 feet and it was most extraordinary on June 17 to find such a quantity of snow. At the same rate Ben Nevis ought to be covered more than half-way down. On a plateau a little below the top was a small wooden tavern attended by a Kirchlein. As I was rather blown with walking through the snow, I halted here and drank some wine and water. The owner had a variety of things to

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meet the pilgrims' wants or suit their fancies. Bundles of dried "Speik" (*Primula glutinosa*) for them to smell at, dried vetches for them to eat, and such a row of spirit bottles. I asked him their names, but I ought to have taken them down—I cannot remember half of them. There was rum, Kirsch (cherry)-geist, Enzian (gentian)—geist and Kloster-geist. I did not taste the last but if it was a speciality of the monks at the top, it might be a very good thing (witness the Chartreuse, especially the green). He told me that the number of pilgrims who visited the shrine in any one day seldom exceeded a couple of hundred, except on certain great feasts, as Easter and Whitsuntide, St. Peter and St. Paul, and some others which I could not hear; and that on these they sometimes exceeded 2000. I reached the top in half-an-hour more, the whole time from Tarvis excluding halts being 2 hrs. 37 min., and the height above Tarvis being about that of Snowdon above the sea. As I neared the top the road became almost wide enough to drive on, and the snow had been evidently cleared away. Just before reaching the church I passed through a double row of booths decked out in the gayest manner. The principal articles for sale were rosaries, crosses, and crucifixes of various materials and sizes; devotional books and paintings of Maria Heilige Berg, the last varying in size from 18 inches in diameter to the size of a sixpence, with plenty of colour and gilding, but no taste. These were of course supplemented by all kinds of toys, and in the larger booths by photographs, &c. Mass was going on in the church, and I passed on down a flight of steps to the larger of the two Inns. The kitchen and guest-room were in one, the former fenced off with a strong railing, as if to resist a charge on the eatables when the pilgrims were numerous. Everything seemed very black and grimy, but I was very hungry, and soon demolished some soup and boiled beef, and then started on a visit to the top. On the way I entered the largest booth to buy a few mementoes. Mass was by this time over, and the narrow passage was crowded by some scores of pilgrims, all of the peasant class, employed at the moment mostly as I was myself. I saw one man buy a large gaudily painted box of toys. It was too large for any of his pockets, and he was at last obliged to carry it under his arm, where it formed a striking contrast to the sober colours of his dress, but would no doubt gratify his children more than anything else there. The top is about 50 feet above the booths, and just overlooks the spire of the church. When about six feet from it, making a slight spring from the snow on to the grass, I thought I felt something strike my right leg: too soon I was aware from former experience that I had sprained a muscle. I went to the top and looked round. I remember that there were clouds on the higher summits, and that there was very fine rocky scenery to the west. But all the time I was busy thinking what I should do. I felt that as I was I could not walk down 3,500 feet to the valley. I did not

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relish the idea of going to bed in the dirty mountain inn. The food was good enough when I was hungry, but otherwise I felt I could not endure it. Then I remembered that they were in the habit of taking people down in a sledge. I hobbled down, quite forgetting the church, and finding that the snow was no hindrance, immediately ordered one. The sledge consists merely of two slight runners shod with iron, and just sufficient framework on them to support two seats for the rider and driver. Two curved pieces of wood enable the rider to hold on, and the runners are turned up in front in a double curve, so as to enable the driver either to lift the sledge up, or hold it back.

I took my seat at 12.15 p.m. The first slope starting from the Inn door was steep and thickly covered with snow. Drawing the sledge across the path, the guide held it up with the runners nearly horizontal so that their hinder ends cut deeply into the snow, and stepped steadily down. When the slope became more gradual, he suddenly let the sledge down on the snow, sat down on the front seat, and we shot away with a velocity which almost took my breath away. The guide skilfully directed our course by kicking the snow with his feet and finally put on the drag with both feet and brought us to a halt. The sledge-way here was partly clear of snow, and it was impossible to go fast as there was no room for the sledge to rest evenly between the snow and the bank. The ground was so rough that we were once very nearly upset. Once only after leaving the snow had we another brilliant run down a steep but smooth piece of the path. The sledge-way came to an end about 500 feet above Saifnitz, and we took half-an hour: had there been no snow we should have done it in 20 minutes. I got down to Saifnitz better than I expected (as the damage was done going up hill, I suppose it did not pain me so much going down), and then slowly hobbled back to Tarvis about 1½ miles, which I reached at 2 p.m. and immediately went to bed. In the evening they persuaded me to see the village doctor who was visiting a sick person in the Inn. He felt my leg where I thought it was damaged, made me double it up, stretch it out, and finally compared it with the other leg. I told him this was no use as they had not been alike since 1860. He recommended opodeldoc, and said it would be well in a day or two if I lay in bed a good deal. I thought I should be only too glad if it was well in a week. He had a most un-German name, Joseph Rumbold, and his bill for the visit was 50 kreutzers (about 10½d.) I shall go abroad next time I am ill, and save the doctor's bill. I stayed very quietly for a few days at Tarvis, still hoping to be able to accomplish the walk by Pontafel and Hermagor to Lienz; but ultimately I thought it better to return here by post and railway, and look after the packages of flowers which I had forwarded from Trieste and Veldes Bad. During my enforced idleness I read a quantity of miscellaneous German literature, and I am convinced they surpass our modern sensational writers of

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the present day as much as those do the novelists of 30 years ago. Here is a specimen from the pen of Wendelin Hugo Landt. In the 16th century (I cannot be particular as to dates) the famous anatomist Vesalius was in high honour at the court of Philip II of Spain. The story opens with his marriage with a young and beautiful girl, whose family had persuaded or compelled her to marry him. As was but natural she had a lover, who on the very nuptial day, sought to persuade her to fly with him. This she refused to do, but promised still to love him and meet him; as may be imagined Vesalius and his young wife soon lived separate lives, and buried as he was in his studies hardly saw each other but at distant intervals. Years passed away, and the wife broken-hearted and dispirited, fancied herself dying, when she sent for Vesalius, confessed to him her faithlessness: that she had had three lovers who had all forsaken her; and prayed for his forgiveness. His only answer was to bid her rise and follow him. He led her to his work-room, a large square room with walls of stone. There was more than one corpse in the room, and in the middle a large table, on which were bloodspots and pieces of flesh. Round the room were large wooden cases and other vessels. His wife, faint and sick, sought to return. He dragged her to one of the cases and opened it. In it was a skeleton beautifully put together; and hanging by it a suit of clothes. These she knew too well. "Alderan" she cried. "Yes," said Vesalius, "I slew him ere he left my house, and thanks to you I have been enabled to examine not only the dead body but the living and to make discoveries which shall bring me everlasting fame! He dragged her to a second case in which she recognised the skeleton of her second lover Miguel; she sank fainting on the floor, but not satisfied, Vesalius dragged her by the hair to a large case near the fireplace. With superhuman strength he raised the lid. Within were many glass vessels filled with ardent spirits and containing different parts of a human body. He raised his wife's head above the edge of the vessel: and as she recovered consciousness, she saw before her the head of her last and best beloved. He loosed his hold and she fell lifeless. Two days afterwards there was a funeral from his house. The bearers remarked how heavy the coffin was and how hollow it sounded. That night who could have looked through the chinks in the work-room door would have seen Vesalius, with his eyes blazing with fiendish joy, dissecting the body of a beautiful woman—his wife.

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ENTOMOLOGICAL LIST.

In the present Report we publish a complete list of all the Lepidoptera known to occur within our district. It is now eight years since our list was started, but at first it only included the Macro-Lepidoptera, the Micros having been added in the last two years alone. Consequently, while the former have been for the most part pretty well worked up, the latter are undoubtedly still very incomplete; and the entire list is now published, not as representing the full Fauna of the district, but as a starting-point and record of discoveries up to the present time. It is arranged in three columns: the first column contains the name, the second states the degree of commonness of the insect, and in the case of a local—or supposed local—insect, gives the principal localities; the third gives the first date of capture for the present year. Where a second date is added, it is the last. If the first is followed by a dash without another date, the insect is still (July 31st) on the wing. The initials refer, by old custom, to the first observer for this year; where none are added, the writer is himself responsible.

The requisite qualification for an insect's admission into our lists is that it should have been taken within ten miles of Marlborough. This is a sufficiently large district for working from a centre, and it is not therefore surprising that many portions of it are entomologically still almost unknown to us. What little is known of the parts about Bedwyn promises many new species thence. The only country properly worked is the vale of the Kennet, running along from Marlborough to Ramsbury and Chilton Foliat, and including the large woods on either side; this lies almost entirely on the chalk. A large portion of the remainder of the district, almost the whole of the north and north-west, is not worth the trouble of much search, being barren downs. But we are by no means yet in a position to give a general idea of the distribution of insects within the limits of the district. None have been admitted without good reason (a ? being sometimes affixed, where the authority is considered somewhat doubtful), and of almost the whole the writer possesses specimens from the localities adduced. About 100 species (mostly Micros, but some others, as *B. roboraria*, &c.) are here recorded for the first time, but without mark.

The total number of Lepidoptera at present known to occur is about 800; and it is a pretty safe prophecy that these will ultimately be increased to over 1000. Many of the divisions are still very incompletely known. The Rhopalocera are well represented by 50 species; *Polyommatus Ægon* and *P. Adonis*

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are likely to be added. Most of the Hawk-moths have occurred occasionally. The Noctuæ would no doubt be considerably increased by careful sugaring, which has been little practised, owing to the few facilities afforded. Probably a dozen species may be added to the genus Eupithecia by breeding; the Geometræ are otherwise pretty well worked up. The Micros will possibly be doubled eventually. Very few of the Phycidae have occurred. One or two usually coast insects are found as *Eubolia lineolata*, and *Homœosoma nebulella*, and *binævella*; and a few more usually northern, as *Hepialus Velleda*.

The following are the names referred to in the list; members have been, if not very scientific, at least more active than for some time past, and some of the school, notably the Captain of the Eleven, have done good service.

T. G. B.	T. G. Balfour.
F. M. D.	F. M. Drysdale.
A. W. F.	A. W. Flux.
C. F. P. F.	C. F. P. Froom.
A. E. G.	A. E. Garrod.
W. M. G.	W. M. Grove.
W. F. V. H....	W. F. V. Harke.
O. F. J.	O. F. Jacson.
F. J. H. J.	F. J. H. Jenkinson, Esq., O.M.
F. H. L.	F. H. Lee.
J. H. W. L....	J. H. W. Lee.
W. H. M.	W. H. Macdonald, Esq.
N. M.	N. Manders.
H. S. P.	H. S. Philpot.
T. A. P.	Rev. T. A. Preston.
H. S. S.	H. S. Sankey.
S. D. S.	S. D. Smith.
T. N. H. S.	T. N. H. Smith.
A. D. S.	A. D. Stallard.
A. E. T.	A. E. Townsend.
S. F. T.	S. F. Townsend.
W. H. W.	W. H. Williams.

E. MEYRICK.

RHOPALOCERA.

Gonepteryx Rhamni ...	very common	Mr.2,A.W,F.—Jy.3.
Colias Edusa	not common.	
C. Hyale...	in 1868, Ramsbury.	
Pieris Brassicæ	abundant	A. 21.—
P. Rapæ	ditto	A. 20.—

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P. Napi	ditto	A. 16.—
Anthocharis Cardamines	common	My. 13,—Jn.17.
Leucophasia Sinapis ...	Rabley W., &c.; not lately.	
Arge Galathea	Bedwyn, Ramsbury, &c. ...	Jy. 19.—
Lasiommata Ægeria ...	common in woods	My. 15.—
L. Megæra	very common	My. 24.—
Hipparchia Semele ...	Aldbourne, &c.; not common.	
H. Janira	abundant	Jn. 16.—
H. Tithonus	ditto	Jy. 10.—
H. Hyperanthus	ditto	Jy. 7, W.H.W.—
Cœnonympha Pamphilus	ditto	My. 16, W.H.W.—
Limenitis Sibilla	Loves W., near Ramsbury.	
Apatura Iris	Savernake Forest?	
Cynthia Cardui	common on downs.	
Vanessa Atalanta	common	Jy. 14, T.A.P.—
V. Io	ditto.	
V. Antiopa	Savernake Forest?	
V. Polychloros	not rare generally	Jy. 31.—
V. Urticæ	very common	Jn. 20.—
Grapta C-album	near Marlborough?	
Argynnis Paphia	common in woods	Jy. 17, N.M.—
A. Adippe	Savernake Forest, &c.	Jy. 10, N.M.—
A. Aglaia	ditto	Jy. 4., N.M.—
A. Selene	ditto	Jn. 10.—Jy. 2.
A. Euphrosyne	generally common	My.22,N.M.,—Jn.19
Melitæa Cinxia	formerly near Bedwyn.	
M. Athalia	ditto.	
M. Artemis	Clatford, Chisledon, &c.; much scarcer than before.	
Nemeobius Lucina	common in woods	Jn. 3, T.G.B.—22.
Thecla Betulæ	West Woods, Ramsbury.	
T. Quercus	very common	Jy. 20, A.E.G.—
T. Rubi	scarce; Rabley, West Woods	Jn. 9.—21.
Chrysophanus Phlæas ...	generally common	My.14,W.H.W.—Jn.1
Polyommatus Argiolus ...	common near holly	My. 13, N.M.—25.
P. Alsus	Mildenhall, West W., &c. ...	Jn. 3, W.H.W.—29.
P. Arion	near Marlborough; scarce.	
P. Corydon	common on downs	Jy. 20, S.F.T.—
P. Alexis	abundant	Jn. 3, C.F.P.F.—
P. Agestis	generally common	Jn. 5—20.
Thymele Alveolus	common	My. 15, N.M.—Jn.1

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Thanaos Tages	ditto	My. 15, N.M.—30.
Pamphila Linea	ditto	Jy. 9, A.E.G.—
P. Sylvanus	ditto	Jy. 4.—27.
P. Comma	once on Martinsell.	

SPHINGINA.

Procris Geryon	Marlborough; vid. not	Jn. 7, C.F.P.F.—20.
Anthrocera Loniceræ ...	Bedwyn, abundant...	Jy. 9, T.A.P.—
A. Filipendulæ	very common	Jy. 11.
Smerinthus Ocellatus ...	not rare.	
S. Populi...	common at light, &c..... ...	My. 30.—Jn. 8.
S. Tiliæ	common	Jn. 6—9.
Acherontia Atropos ...	occasional.	
Sphinx Convolvuli	ditto.	
S. Ligustri	generally common	Jn. 1, W.H.M.—
Deilephila Livornica ...	once, Marlborough.	
Chærocampa Celerio ...	ditto.	
C. Elpenor	scarce, Marlborough	Jy. 9, N.M.
C. Porcellus	common	Jn.19,W.M.G.—Jy.2
Macroglossa Stellatarum	common.	
Sesia Fuciformis	Sav. Forest, West W., &c.	
S. Bombyliformis	Marlborough.	
Sphecia Bembeciformis...	Marlborough.	
Trochilium Tipuliforme...	common.	

BOMBYCINA.

Hepialus Hectus	Littlecote Park, &c.	
H. Lupulinus	common	My.31, C.F.P.F.—Jn. 11.
H. Humuli	not rare	Jy. 20, W.F.V.P.
H. Velleda	Manton Copse.	
H. Sylvinus	Ramsbury, &c.	
Cossus Ligniperda	rather common.	
Cerura Furcula	not rare.	
C. Vinula	common	My. 25 (bred),—30.
Stauropus Fagi	Sav. Forest, twice	Jn. 16.
Notodonta Ziczac	Marlborough.	
Pterostoma Palpina ...	ditto	
Leiocampa Dictæa ...	ditto	
Lophopteryx Camelina ...	not rare	Jn. 25 (bred).
Diloba Cæruleocephala ...	common everywhere.	
Petasia Cassinea	Sav. Forest, not scarce.	

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Peridea Trepida	Marlborough, once.	
Pygæra Bucephala ...	common	My. 17, C.F.P.F.
Psilura Monacha	Ramsbury, Henswood, &c.	
Dasychira Pudibunda ...	common.	
Demas Coryli	Sav. Forest, scarce.	
Orgyia Antiqua	common.	
O. Gonostigma	near Marlborough?	
Stilpnotia Salicis	larvæ common.	
Porthesia Auriflua	abundant	Jy. 20, F.M.D.—
Miltochrista Miniata ...	Ramsbury, Sav. Forest, &c.	
Lithosia Aureola	unique, Sav. Forest.	
L. Complanula	very common	Jy. 31.—
L. Griseola	Ramsbury, Chilton, &c.	
var. Stramineola ...	with the last.	
Œnistis Quadra	Sav. Forest, once.	
Gnophria Rubricollis ...	ditto, &c., abundant	Jn. 16.—30.
Cybosia Mesomella ...	Marlborough.	
Nudaria Mundana	Ramsbury, &c.	
Hypercompa Dominula...	vid. not.	
Euthemonia Russula ...	Sav. Forest, not of late.	
Arctia Caja	abundant	Jn. 16, O.F.J.—
Nemeophila Plantaginis	locally abundant	Jn. 7, C.F.P.F.—Jy. 16
Phragmatobia Fuliginosa	not common	My. 10.
Spilosoma Menthastri ...	abundant	My. 8.—Jy. 4.
S. Lubricipeda	ditto	My. 17, N.M.—Jy. 5.
Diaphora Mendica	common at light	Jn. 11.—20.
Callimorpha Jacobææ ...	common	My. 25, W.M.G.—Jn. 21.
Lasiocampa Rubi	West Woods.	
L. Quercus	abundant.	
Eriogaster Lanestris ...	larvae abundant.	
Pœcilocampa Populi ...	common at light.	
Trichiura Crataegi ...	Marlborough, not rare.	
Clisiocampa Neustria ...	scarce: Chisledon, &c.	
Odonestis Potatoria ...	very common	Jy. 2, F.H.L.—
Gastropacha Quercifolia	sometimes common.	
Cilix Spinula	common	Jy. 28.—
Platypteryx Lacertinaria	Sav. Forest.	
Drepana Falcataria ..	ditto, Henswood.	
D. Hamula	Sav. Forest.	
D. Unguicula	ditto, common	My. 13.—Jn. 1.
Psyche Nitidella	Rabley W., not scarce.	

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NOCTUINA.

Thyatira Derasa	Marlborough.	
Cymatophora Duplaris ...	abundant	Jy. 1—12.
C. Diluta	Manton Copse.	
C. Flavicornis	Sav. Forest.	
C. Ridens	Manton Copse, rare.	
Bryophila Perla	abundant	Jy. 20.—
B. Glandifera	Marlborough.	
Acronycta Psi	abundant	Jn. 8, S.D.S.—Jy. 20.
A. Aceris	Marlborough, not rare	Jn. 27 (bred).
A. Megacephala	common on poplars	Jn. 26 (bred).
A. Alni	twice.	
A. Ligustri	common	My. 31.—Jn. 26.
A. Rumicis	not scarce.	
Leucania Conigera ...	Ramsbury, common.	
L. Lithargyria	common.	
L. Impura	Ramsbury, &c.	
L. Pallens	abundant.	
Gortyna Flavago	Marlborough, at light.	
Hydræcia Nictitans ..	Poulton.	
H. Micacea	Marlborough, at light.	
Axylia Putris	Marlborough.	
Xylophasia Rurea	Sav. Forest	Jn. 19, W.M.G.
X. Lithoxylea	common	Jy. 27.—
X. Polyodon	abundant	Jy. 3, A E.T.—
X Hepatica	very common	Jy. 15.—
Neuria Saponariæ ...	Marlborough, at light.	
Heliophobus Popularis ...	ditto, ditto, common.	
Cerigo Cytherea	Marlborough.	
Luperina Testacea ...	abundant at light.	
L. Cespitis	Marlborough, once.	
Mamestra Brassicæ ...	abundant	Jn. 7, S.D.S.—
M. Persicariæ	Marlborough.	
Apamea Basilinea	common at light	Jn. 13, S.D.S.—Jy. 1.
A. Gemina	Ramsbury.	
A. Unanimis	larvae common	My. 23 (bred).
A. Oculea	abundant	Jy. 8.—
Miana Strigilis	ditto	Jn. 24.—Jy. 19.
M. Furuncula	Ramsbury.	
M. Arcuosa	ditto, common but local.	
Grammesia Trilinea ...	Marlborough.	

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Caradrina Alsines ... ... Ramsbury, at light.
C. Blanda ... ... ditto, ditto.
C. Cubicularis ... ... abundant ... ... Jy. 28.—
Rusina Tenebrosa ... ... Ramsbury, Marlborough.
Agrotis Puta ... ... Marlborough, at light.
A. Suffusa ... ... common.
A. Segetum ... ... abundant ... ... Jn. 13, H.S.P.—Jy. 11.
A. Exclamationis ... ... ditto .. .. Jn. 28.—Jy. 22.
A. Corticea ... ... Ramsbury, common.
A. Tritici ... ... Marlborough.
A. Porphyrea ... ... Bedwyn, common.
Triphæna Ianthina ... Ramsbury.
T. Fimbria .. .. Marlborough, Littlecote.
T. Interjecta ... ... not uncommon.
T. Orbona ... ... common.
T. Pronuba ... ... abundant ... ... Jn. 19 —
Noctua Augur ... ... common.
N. Plecta ... ... Marlborough.
N. C-nigrum ... ... common ... ... Jy. 9, N.M.
N. Triangulum ... ... Marlborough ... . Jy. 19, W.H.W.
N. Rhomboidea ... ... Ramsbury.
N. Brunnea ... ... common.
N. Festiva ... ... abundant.
N. Bella ... ... common at light.
N. Baja ... ... Ramsbury.
N. Xanthographa ... ... abundant.
Trachea Piniperda ... ... Ramsbury Plantation ... ... A. 22.—30.
Tæniocampa Gothica ... very common ... ... Mr. 15.—My. 2.
T. Rubricosa ... ... Marlborough.
T. Instabilis ... ... abundant ... ... Mr. 20,—A. 30.
T. Populeti ... ... Marlborough.
T. Stabilis ... ... abundant ... ... Mr. 5.—A. 2.
T. Gracilis ... ... Marlborough, at light ... ... My. 1—8.
T. Miniosa ... ... West W., one larva.
T. Munda ... ... not uncommon.
T. Cruda ... ... abundant ... ... Mr. 30, H.S.S.—A. 8.
Orthosia Lota ... ... Marlborough.
O. Macilenta ... . Sav. Forest.
Anchocelis Pistacina ... abundant.
A. Lunosa ... ... ditto at light.
A. Litura ... ... common.

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Cerastis Vaccinii	abundant	Mr. 1 (h).
Scopelosoma Satellitia ...	common.	
Dasycampa Rubiginea ...	Marlborough, once.	
Xanthia Cerago	ditto, at light.	
X. Flavago	ditto ditto, common	
X. Ferruginea	common.	
Cosmia Trapezina	abundant.	
C. Diffinis	common.	
C. Affinis	Ramsbury, not rare.	
Eremobia Ochroleuca ...	Henswood, once.	
Dianthoecia Carpophaga	Marlborough, at light	My. 29.
D. Capsincola	common.	
Hecatera Serena ...	not scarce	Jy. 3, W.H.W.
Epunda Lichenea	Marlborough.	
Miselia Oxyacanthae ...	common.	
Agriopis Aprilina	ditto.	
Phlogophora Meticulosa	ditto	My. 29.—Jn. 8.
Euplexia Lucipara ...	Marlborough.	
Aplecta Nebulosa	very common	Jn. 13 (bred).—Jy. 3.
A. Advena	Ramsbury	Jn. 25.
Hadena Protea	rather common.	
H. Dentina	common	Jy. 8, S.F.T.
H. Oleracea	abundant	Jy. 1, N.M.—20.
H Thalassina	common	Jn. 6.
Xylocampa Lithorhiza ...	common at light, &c.	Mr. 27.—A. 16.
Calocampa Exoleta ...	not scarce.	
Xylina Rhizolitha	Sav. Forest.	
Cucullia Verbasci	larvæ abundant.	
C. Umbratica	common on fences, &c	Jn. 12.—Jy. 1.
Brephos Parthenias ...	Sav. Forest	A. 2.—10.
B. Notha	West W., common	Mr. 26.—A. 11.
Abrostola Urticæ	common.	
A. Triplasia	ditto.	
Plusia Chrysitis	ditto	Jn. 12.—Jy. 23.
P. Festucæ	Marlborough.	
P. Iota	common at light	Jy. 8.
P. Gamma	abundant	Jy. 3, A.E.T.—
Gonoptera Libatrix ...	very common.	
Amphipyra Pyramidea ...	ditto.	
A. Tragopogonis	ditto	Jy. 31.—
Mania Typica	common	Jy. 18.—

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M. Maura	ditto...	Jy. 25.—
Toxocampa Pastinum ...	near Bedwyn	Jy. 19, N.M.—
Catocala Nupta	common.	
Euclidia Mi	ditto...	Jn. 16.—Jy. 2.
E. Glyphica	Savernake, West W.	Jn. 16.
Phytometra Ænea... ...	Sav. Forest, common	Jn. 16.—28.

GEOMETRINA.

Ourapteryx Sambucaria	common	Jy. 9, O.F.J.—21.
Epione Apiciaria	moderately common.	
Rumia Cratægata	abundant...	My. 16.—
Angerona Prunaria ...	West W., Henswood, &c. ...	Jy. 1, W.H.W.—19.
Metrocampa Margaritata	common	Jy. 16, S.F.T.—27.
Ellopia Fasciaria	Ramsbury, Sav. Forest.	
Eurymene Dolobraria ...	Sav. Forest, &c.	My. 28.
Pericallia Syringaria ...	Ramsbury, &c.	
Selenia Illunaria	abundant...	Mr. 27.—A. 11.
S Lunaria	Manton Copse.	
S. Illustraria	Ramsbury Plantation.	
Odontopera Bidentata ...	common	Jn. 6.—11.
Crocallis Elinguaria ...	ditto.	
Ennomos Tiliaria	ditto.	
E. Fuscantaria	Sav. Forest, &c.	
E. Erosaria	Marlborough.	
E. Angularia	common.	
Himera Pennaria	Marlborough.	
Phigalia Pilosaria	Sav. Forest, &c.	Mr. 1.
Nyssia Hispidaria	Marlborough, once.	
Amphidasis Prodromaria	Sav. Forest, not common.	
A. Betularia	not common	Jn 19 (bred.)
Hemerophila Abruptaria	common	My. 1.—14.
Cleora Glabraria	Sav. Forest, once.	
C. Lichenaria	common.	
Boarmia Repandata ..	ditto.	
B. Rhomboidaria	ditto...	Jy. 26, J.H.W.L.—
B. Roboraria	Puthall W., once.	Jy. 12.
B. Consortaria...	Marlborough, once.	
Tephrosia Crepuscularia	not common	My. 8, W.H.W.—Jn.2
T. Laricaria	Stype W....	A. 7.
T. Extersaria	Puthall W., common.	
Pseudoterpna Cytisaria...	Aldbourne, Sav. Forest.	

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Iodis Lactearia	very common	My. 27, W.M.G.—Jn. 26.
Phorodesma Bajularia ...	Sav. Forest, twice	Jy. 9, N.M.
Hemithea Thymiaria ...	common	Jn. 28.—
Ephyra Porata	ditto.	
E. Punctaria	Puthall W., West W.	
E. Trilinearia	Sav. Forest, Ramsbury... ...	My. 31, T.G.B.
E. Omicronaria	Puthall W., West W.	My. 15.—Jn. 10.
E. Pendularia...	ditto, ditto.	
Asthena Luteata	widely distributed	Jn. 27.—Jy. 5.
A. Candidata	abundant...	My. 8.—Jn. 1.
A. Sylvata	Sav. Forest, Manton W.	
Acidalia Scutulata ...	common	Jy. 3.—
A. Bisetata	abundant...	Jy. 16.—
A. Trigeminata	Marlborough.	
A. Virgularia	Ramsbury, &c., common ...	Jn. 27.—Jy. 11.
A. Subsericeata	once, Marlborough...	Jn. 18.—
A. Remutata	common in woods	My. 31.—Jn. 20.
A. Imitaria	not uncommon	Jy. 22.—
A. Aversata	common	Jy. 8, S. F. T.—
Bradyepetes Amataria ...	ditto...	Jy. 7, W. H. W.—21.
Cabera Pusaria	ditto...	My. 16.—
C. Exanthemata	ditto...	Jn. 12.—28.
Corycia Punctata	Savernake Forest, &c.	Jn. 8, N. M.—11.
C. Taminata	ditto.	
Aventia Flexula	Knighton.	
Halia Wavaria	common	Jy. 2—21.
Strenia Clathrata ...	ditto...	My. 3.—Jn. 11.
Lozogramma Petraria ...	Savernake Forest, &c.	My. 13, A.D.S.—Jy. 1.
Numeria Pulveraria ...	Boltsridge W., &c., scarce.	
Fidonia Atomaria	common	Jn. 27, N. M.—Jy. 22
F. Piniaria	common in firs	Jy. 5.
Minoa Euphorbiata ...	not rare.	
Abraxas Grossulariata ...	very abundant	Jy. 9, W. H. W.—
A. Ulmata	Binck-knoll, &c., scarce.	
Ligdia Adustata	common	Jn. 5.—Jy. 1.
Lomaspilis Marginata ...	ditto	My. 31, C.F.P.F.—Jy 5
Hybernia Rupicapraria	ditto	F. 24.—Mr. 30.
H. Leucophearia	ditto.	
H. Aurantiaria	Sav. Forest.	
H. Progemmaria	common.	Mr. 5.—22.

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H. Defoliaria ... ... ditto.
Anisopteryx Æscularia ditto at light ... ... Mr. 10.—15.
Cheimatobia Brumata ... abundant.
Oporabia Dilutata ... ... ditto.
Larentia Didymata ... common ... ... Jy. 5.—
L. Multistrigaria ... not rare.
L. Olivaria ... ... Sav. Forest.
L. Miaria ... ... abundant ... ... Jn.3,C.F.P.F.—Jy.21
Emmelesia Affinitata Binck-knoll, &c., common.
E. Alchemillata .. ... Henswood, Rabley ... ... Jy. 15.
E. Albulata ... ... Chisledon, Bedwyn ... ... Jn. 16.—Jy. 1.
Eupithecia Venosata ... West W.
E. Centaureata ... ... Marlborough, not common ... My. 28.—Jn. 6.
E. Subfulvata ... ... not scarce ... ... Jy. 16.—
E. Plumbeolata ... ... common ... ... Jn. 3, N. M.—Jy. 8.
E. Haworthiata ... ... Mildenhall ... ... Jn. 27.
E. Castigata ... ... common ... ... Jn. 9.—30.
E. Lariciata ... ... Ramsbury, Binck-knoll.
E. Irriguata ... . once in Sav. Forest.
E. Nanata ... ... Marlborough; vid. not ... ... My. 22.
E. Subnotata ... ... common.
E. Vulgata ... ... abundant at light ... ... My. 23, N. M.—Jn. 15.
E. Assimilata ... ... common in gardens ... ... My. 22.—Jn. 5.
E. Subciliata ... ... once, Littlecote.
E. Dodoneata ... ... Sav. Forest.
E. Abbreviata ... ... ditto, common ... . My. 1.—22.
E. Exiguata ... ... common ... ... Jn. 16.—Jy. 2.
E. Pumilata ... ... not scarce.
E. Coronata ... ... Ramsbury ... ... Jy. 31.
E. Rectangulata ... ... common ... ... Jn 28,F.J.H.J.—Jy.6.
Lobophora Viretata ... once, Sav. Forest.
L. Lobulata ... ... Sav. Forest, not rare.
Thera Variata ... ... common ... ... My. 24
T. Firmaria ... ... Chilton, Ramsbury.
Ypsipetes Elutata ... ... very common.
Melanthia Rubiginata ... Sav. Forest, Boltsridge ... Jy. 19, S. F. T.
M. Ocellata ... ... common ... ... My. 15.—
M. Albicillata ... ... Henswood, Rabley, &c. ... ... Jy. 11.—20.
Melanippe Hastata ... Puthall W., West W.
M. Procellata ... ... Manton Copse.
M. Unangulata ... ... not rare.

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M. Rivata	scarce	Jy. 1, T. G. B.
M. Biriviata	common	My. 13.—Jy. 8.
M. Montanata	very abundant	My. 31, C. F. P. F. Jn. 23.
M. Fluctuata	ditto	A. 3, T. N. H. S.—
Anticlea Rubidata ...	Marlborough, West W.	Jy. 1, T. G. B.—21.
A. Badiata	common	A. 21.—My. 15.
A. Derivata	ditto	A. 30.—My. 5.
Coremia Propugnata ...	Sav. Forest	
C. Ferrugaria	very common	My. 15 C. F. P. F.—Jn. 8
C. Unidentaria	common	Jn. 11.—21.
Camptogramma Bilineata	very abundant	Jn. 12.—
Phibalapteryx Tersata ...	common	Jn. 27.—Jy. 20.
P. Lignata	Marlborough, not rare.	
P. Vitalbata	Ramsbury.	
Scotosia Dubitata	common	My. 12, H. S. P.
S. Vetulata	common	Jy. 3.—
S. Rhamnata	Knighton, &c.	
S. Certata	Marlborough.	
Cidaria Miata	common	A. 14 (h).
C. Picata	common in woods	Jy. 8, S. F. T.—
C. Corylata	ditto	Jn. 6,—21.
C. Russata	very common	My. 24, C. F. P. F—Jn. 6
C. Immanata	ditto	Jy. 12.—30.
C. Suffumata	Marlborough.	
C. Silaceata	Pewsey.	
C. Prunata	Ramsbury, &c.	
C. Testata	Marlborough.	
C. Fulvata	common	Jy. 8.—22.
C. Pyraliata	ditto	Jn. 28.—Jy, 5.
C. Dotata	ditto in gardens	Jy. 7, N. M.
Eubolia Cervinata	Marlborough.	
E. Mensuraria	common	Jy. 8—11.
E. Plumbaria	abundant	Jy. 24.—
E. Lineolata	Marlborough Downs.	
Anaitis Plagiaria	common	My. 28.—Jn. 16.
Chesias Spartiata	Marlborough.	
Odezia Chærophyllata ...	Sav. Forest, &c., abundant ...	Jn. 16, N. M.—Jy. 20.
	PYRALIDINA.	
Hypena Proboscidalis ...	very common	Jn. 28, A. E. T.—
H. Rostralis	common.	

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Rivula Sericealis	ditto	Jy. 19, W.H.W.—
Herminia Barbalis ...	West W., Puthall W.	Jn. 5, T.G.B.—Jy. 10.
H. Tarsipennalis	common.	
H. Nemoralis	West W.	Jn. 11.
Pyralis Farinalis	Marlborough.	
Aglossa Pinguinalis ...	abundant	Jy. 8.—
Pyrausta Punicealis ...	Marlborough Downs.	
P. Purpuralis	Sav. Forest, &c., common ...	Jy. 19.—
P. Ostrinalis	ditto ditto	My. 15.
Herbula Cespitalis ...	common	Jn. 21.—Jy. 20.
Ennychia Anguinalis ...	West W.	
Cataclysta Lemnata ...	Marlborough.	
Paraponyx Stratiotata ...	ditto, at light.	
Hydrocampa Nymphæata	Binck-knoll, &c.	
H. Stagnata	common	Jy. 15.—21.
Acentropus Niveus ...	Martinsell, once.	
Botys Pandalis	Rabley, Sav. Forest	Jn. 9.
B. Verticalis	abundant	Jy. 25.—
B. Fuscalis	common	Jn. 5, N.M.—Jy. 1.
B. Urticata	ditto	Jn. 13.—Jy. 5.
Ebulea Crocealis	Sav. Forest, Bedwyn	Jy. 19, T.A.P.
E. Sambucalis	common	Jn. 5.—Jy. 11.
Pionea Forficalis	very common	My. 28.—Jn. 16.
Spilodes Cinctalis	common in clover	Jy. 1.—27.
Scopula Lutealis	very common	Jy. 31.—
S. Olivalis	ditto ditto	Jn. 16.—Jy. 20.
S. Prunalis	ditto ditto	Jy. 8.—
S. Ferrugalis	once, Henswood.	
Stenopteryx Hybridalis...	pretty common	Jy. 19.
Nola Cucullatella	Sav. Forest, Chilton.	
N. Cristulalis	Marlborough, Puthall W. ...	My. 20.
Simaethis Fabriciana ...	very abundant	My. 10.—
Choreutes Scintillulana...	Chilton.	
Eudorea Ambigualis ...	abundant	My. 31.—Jy. 2.
E. Pyralella	common	Jn. 5.—Jy. 15.
E. Cratægella	not rare.	
E. Frequentella	common	Jy. 5.—
E. Resinea	Boltsridge W., once.	
E. Angustea	Marlborough.	
Aphomia Colonella... ...	common	Jy. 2.—
Achroia Grisella	Marlborough, Ramsbury ...	Jy. 8.—

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Ephestia Elutella	Marlborough.	
Homœosoma Nebulella ..	Ramsbury, not rare.	
H. Binævella	ditto, and Marlborough	Jy. 18.—
Acrobasis Tumidella ...	Henswood.	
A. Consociella	Thrup W.	
Nephopteryx Roborella ..	Chilton, Boltsridge W.	
Crambus Chrysonuchellus	Sav. Forest, local	Jn. 5.—Jy. 2.
C. Pratellus	abundant	Jn. 5.—Jy. 11.
C. Pascuellus	not common	Jy. 19.—
C. Hortuellus	abundant	Jn. 16, N.M.—Jy. 15.
C. Culmellus	very abundant	Jy. 1.—
C. Inquinatellus	common	Jy. 25.—
C. Geniculeus...	ditto	Jy. 1.—
C. Selasellus	Marlborough.	
C. Tristellus	abundant	Jy. 17.—
C. Pinetellus	Clatford Bottom, Stype W.	
C. Perlellus	Ramsbury, &c.	
Chloephora Prasinana ...	common	My. 5.
C. Quercana	Sav. Forest, &c., not common.	
	TORTRICINA.	
Hypermecia Augustana	(Cruciana) common	Jn. 24.—
Eulia Ministrana	ditto	Jn. 3—21.
Antithesia Betulaetana ..	Chilton, West W., Stype W.	
A. Capræana	one bred	Jy. 10.
A. Ochroleucana	pretty common	Jy. 7.—
A. Cynosbatella	common	Jn. 5.—Jy. 11.
A. Pruniana	abundant...	Jn. 7.—Jy. 21.
A. Marginana	scarce, Marlborough, Bedwyn	Jn. 3.—
A. Gentianana	bred, Mildenhall	Jy. 13.—
A. Ustulana	Rabley W., not rare	Jy. 23.—
Tortrix Viridana	abundant...	Jn. 28.—
T. Forsterana	Rabley W., &c.	
T. Heparana	common	Jy. 7.—
T. Ribeana	ditto...	Jy. 7.—
T. Corylana	ditto.	
Lozotaenia Sorbiana ...	Sav. Forest, Rabley W	Jn. 27.—Jy. 16.
L. Musculana	common	My. 20.—Jn. 21.
L. Unifasciana	very common	Jy. 11.—
L. Fulvana	common	Jy. 21.—
L. Roborana	Loves W.	
L. Xylosteana	common	Jy—26.

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L. Rosana	abundant...	Jy. 7.—
Ditula Angustiorana ...	ditto...	Jn. 25.
Ptycholoma Lecheana ...	bred commonly	Jn. 21.—Jy. 8.
Notocelia Udmanniana ...	common	Jy. 26.
Pardia Tripunctana ...	ditto...	My. 31.—Jy. 17.
Spilonota Roborana ...	ditto...	Jy. 26.—
S. Trimaculana	ditto...	Jn. 7.—Jy. 8.
Lithographia Campoliliana	ditto in sallows	Jn. 11.—20.
L. Nisella...	ditto ditto.	
L. Penkleriana	very abundant	Jy. 1.—
Phlæodes Tetraquetrana	West W., Puthall W.	Jn. 17.—Jy. 9.
Poedisca Solandriana ...	common	Jy. 26.—
Catoptria Scopoliana ...	Ramsbury, Rabley, &c	Jy. 17.—
Halonota Bimaculana ...	West W., common.	
H. Scutulana	railway bank, &c	Jn. 5.—21.
H. Brunnichiana	common	Jn. 16.—Jy. 1.
H. Tetragonana	not rare, Boltsridge W. &c ...	Jy. 31.—
H. Inopiana	Ramsbury, common	
Dicrorampha Petiverella .	very common	Jn. 17.—
D. Sequana	Bedwyn	Jy. 19.—
D. Politana	ditto, Aldbourne, Ramsbury, &c.	Jy. 19.—
D. Simpliciana	Littlecote	Jy. 31.—
D. Plumbagana	abundant...	My. 27.—Jn. 29.
Coccyx Hyrciniana ...	ditto in fir woods	Jn. 16.—Jy. 27.
Cartella Bilunana	West W.	
Hedya Ocellana	very common	Jy. 26.—
H. Dealbana	ditto...	Jy. 7.—
H. Trimaculana	common	Jn. 28, F.J.H.J.—
Steganoptycha Nævana ..	very common	Jy. 26.—
Anchylopera Mitterbâcheriana	Rabley, &c., scarce	Jn. 21.—Jy. 8.
A. Diminutana	Boltsridge W., scarce	Jy. 7.
A. Lundana	very common	My. 8.—
A. Derasana	Rabley, scarce	Jn. 8.
Bactra Lanceolana... ...	common by the river	Jn. 7.—21.
Argyrotoza Conwayana...	abundant...	Jn. 21.—Jy. 18.
Dictyopteryx Contaminana	ditto.	
D. Lœflingiana	ditto...	Jy. 5.—21.
Crœsia Bergmanniana ...	ditto...	Jy. 5.—
C. Forskaleana	ditto	Jy. 23.—
C. Holmiana	common	Jy. 26.—
Hemerosia Rhœdiella ...	Sav. Forest, &c., common ...	My. 15.—Jn. 8.

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Oxygrapha Literana ...	Sav. Forest, &c., common.	
Peronea Schalleriana ...	Bedwyn, Rabley W	Jy. 31.—
P. Comparana	very common	Jy. 26.—
P. Tristana	Boltsridge W., &c.	
P. Favillaceana	Sav. Forest, abundant.	
P. Hastiana	Marlborough.	
P. Variegana	very common	Jy. 31.—
Paramesia Ferrugana ...	Bedwyn, Stype W.	
Teras Caudana	Manton Copse, Bedwyn	
Poecilochroma Profundana	common	Jy. 31.—
P. Corticana	very abundant	Jy. 11.—
Anisotænia Ulmana ...	once, Little Frith.	
Roxana Arcuella	West W, Rabley, &c	Jn. 3.—Jy. 11.
Semasia Spiniana	Rabley Lane	
S. Woeberana	Ramsbury	Jy. 31.—
S. Janthinana	ditto, not common.	
S. Rufillana	Bedwyn, common	Jy. 19.—
S. Nanana	Ramsbury.	
Eucelis Aurana	Knighton.	
Ephippiphora Argyrana ..	not very common	My. 5.—21.
E. Nigricostana	Savernake, Knighton, &c ...	Jn. 30.—Jy. 11.
Stigmonota Compositella	Ramsbury, &c., common ...	My. 24.—Jn. 20.
S. Internana	vid. not.	
S. Perlepidana	generally common	My. 3.—Jn. 1.
Asthenia Splendidulana ..	Sav. Forest.	
Retinia Buoliana	Eastridge	Jy. 26.—
R. Pinivorana	ditto, common	Jn. 16.—Jy. 11.
Endopisa Proximana ...	Binck-Knoll, abundant	Jn. 28, F.J.H.J.
Carpocapsa Splendana ...	Sav. Forest, &c.	
C. Pomonella	Ramsbury.	
Grapholita Albersana ...	common in woods	My. 20.—Jn. 8.
G. Ulicetana	abundant	A. 23.—
G. Hypericana	very common	Jn. 10.—
Cnephasia Hybridana ...	abundant	My. 31.—Jy 1.
C. Subjectana	ditto	Jn. 16—Jy. 17.
C. Virgaureana	ditto	Jn. 28.—
C. Alternella	common.	
Ablabia Pratana	Aldbourne Downs	Jy. 31.—
Euchromia Striana ...	very common	Jy. 1.—
Sericoris Lacunana ...	abundant	Jn. 9.—
S. Urticana	common	Jy. 11.—

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Lobesia Reliquana	common	Jn 3.—Jy. 11.
Chrosis Tesserana	ditto	Jn. 5.—Jy. 8.
Argyrolepia Subbaumanniana	Aldbourne, Martinsell ...	Jy. 8.
A. Badiana	not uncommon	Jn. 21.—Jy. 2.
A. Luridana	vid. not	Jn. 24.—Jy. 18.
Eupœcilia Maculosana ...	common, Manton, &c	Jn. 17.—23.
E. Angustana	not rare	Jy. 19.—
E. Subroseana	West W., common	Jn 17.—Jy. 15.
E. Ruficiliana	near Marlborough	
Xanthosetia Hamana ...	common	Jn. 11.—
X Zœgana	Loves W., Rabley	Jy. 8.—
Lozopera Dilucidana ...	Bedwyn.	
Tortricodes Hyemana ...	abundant	Mr. 11.—A. 21.

TINEINA.

Chimabacche Fagella ...	very common	A, 2.—My. 7.
Talæporia Pseudo-bombycella	cases in Sav. Forest.	
Solenobia Inconspicuella	ditto ditto.	
Xysmatodoma Melanella	bred freely	Jn. 26.—Jy. 13.
Tinea Rusticella	common	Jn. 14.—
T. Tapetzella	Marlborough, Ramsbury ...	Jy. 3, S.D.S.—
T. Arcella	rather common	Jy. 16.—
T. Cloacella	common	Jn. 27.—Jy. 20.
T. Fuscipunctella	Marlborough	Jn. 12.
T. Pellionella	abundant	Jy. 11.—
T. Lapella	common	Jn. 14.—Jy. 1.
T. Semifulvella	not rare	Jn. 9.—Jy. 21.
Lampronia Quadripunctella	Manton W., not rare	Jn. 11.—20.
L. Praelatella	Rabley, &c.	Jy. 7.
L. Rubiella	common.	
Incurvaria Masculella ...	ditto	My. 12.—Jn 2.
Nemophora Swammerdamella	ditto	Jn. 3.—21.
N. Schwarziella	ditto	Jn. 3.—Jy. 1.
Adela Fibulella	pretty common	Jn. 7.—Jy. 3.
A. Degeerella	abundant in woods	Jn. 4.—25.
A. Viridella	abundant	My. 15.—Jn. 6.
Micropteryx Calthella ...	ditto	Jn. 12.—Jy. 7.
M. Aruncella	Marlborough	
M. Seppella	abundant	Jn. 3.—Jy. 5.
M. Allionella	Marlborough ?	
M. Fastuosella	Manton Copse.	
M Thunbergella	very common	My. 20.—Jn. 11.

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M. Semipurpurella	Manton	My. 4.
M. Subpurpurella	abundant	My. 1,—23.
Swammerdamia Apicella	common	My. 17.—Jn. 21.
S. Cæsiella	ditto	Jy. 6.—
S. Griseocapitella	Puthall W.	Jn. 11.
S. Lutarea	Bedwyn, Ramsbury; common	Jy. 19.—
S. Pyrella	common	My. 1.—26.
Hyponomeuta Plumbellus	very common	Jy. 26.—
H. Padellus	common.	
H. Evonymellus	ditto	Jy. 26.—
Anesychia Decemguttella	locally common	Jy. 7.—
Prays Curtisellus	common	Jn. 27.—Jy. 18.
Plutella Cruciferarum ...	abundant	Jn. 14.—30.
P. Porrectella	Marlborough	My. 28.—Jn. 20.
Cerostoma Sequella ...	Ramsbury, not rare	Jy. 31.—
C. Vittella	common	Jy. 31.—
C. Radiatella	abundant	A. 23. (h)—My. 8.
C. Costella	common	
C. Sylvella	ditto.	
C. Alpella	Sav. Forest, scarce.	
C. Scabrella	ditto ditto.	
C. Xylostella	common	Jy. 19.—
Theristis Caudella	Ramsbury	A. 1. (h).
Phibalocera Quercana ...	abundant	Jy. 19.—
Depressaria Costosa ...	common, bred	Jy. 22.—
D. Liturella	ditto bred	Jy. 30.—
D. Assimilella	Martinsell, bred	Jn. 25.—Jy. 3.
D. Atomella	ditto	
D. Arenella	abundant	A. 5.—My. 21.
D. Propinquella	common	A. 3.—My. 21.
D. Subpropinquella ...	ditto	Mr. 25.—My. 1.
D. Alstrœmeriana	pretty common.	
D. Purpurea	abundant	A. 2.—My. 7.
D. Hypericella	Rabley, bred	Jy. 24.—31.
D. Conterminella	Marlborough, bred.	
D. Ocellana	Axford.	
D. Applana	very abundant	F. 26.—My. 26.
D. Ciliella	very common	A. 1.—My. 3.
D. Pimpinellae	Axford, &c.	A. 5.—23.
D. Albipunctella	Ramsbury, &c.	A. 5.—My. 2.
D. Chærophylli	Marlborough, Axford	A. 21.—My. 7.

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D Ultimella	Ramsbury, &c., common ...	A. 5.—23
D. Nervosa	Axford, Marlborough, &c.	
D. Heraclliana...	common	A. 24—My. 3.
Gelechia Cinerella	Rabley, common	Jy. 11.—20.
G. Rufescens	generally distributed	Jy. 26.—
G. Populella	Ramsbury, Bedwyn, &c.; bred	Jy. 28.—
G. Ericetella	West W., common	Jy. 1.—8.
G. Mulinella	Clench Common.	
G. Sororculella	Ramsbury, bred.	
G. Terrella	abundant	Jn. 11.—
G. Acuminatella	Ramsbury, &c.. larvæ	larvæ, Jy.
G. Affinis...	abundant in thatch...	Jn. 27.—Jy. 21.
G. Domestica	ditto ditto	Jy. 27.—
G. Proximella	West W., common	Jy. 1.—8.
G. Notatella	ditto...	Jy. 11.—15.
G. Vulgella	Sav. Forest, &c.	
G. Luculella	Henswood, West W.	
G. Fugitivella...	Marlborough	Jn. 24.
G. Maculea	common	Jy. 31.—
G. Tricolorella	ditto	
G. Sequax	Rabley, bred	Jy. 16.
G. Dodecella	Eastridge...	Jy. 21.
G. Triparella	not uncommon	Jn. 24.—Jy. 8.
G. Ligulella	Bedwyn	Jy. 19.
G. Anthyllidella	Marlborough, bred...	Jn. 21.—Jy. 3.
G. Atrella	Rabley, Bedwyn, &c.	Jy. 16.—
G. Gemmella	ditto ditto, and Stype W.	
G. Næviferella	Marlborough, Axford	Jn. 7.
Chelaria Hubnerella ...	common.	
Harpella Geoffrella ...	Rabley, Henswood, &c.	Jn. 7.—Jy. 1.
Dasycera Sulphurella ...	Marlborough, Sav. Forest ...	Jn. 7.—Jy. 11.
Œcophora Flavimaculella	Rabley.	
Œ. Tinctella	Sav. Forest, Ramsbury, &c....	Jn. 21.
Œ. Fuscescens	Ramsbury.	
Œ. Pseudospretella ...	abundant...	Jn. 2.—
Endrosis Fenestrella ...	ditto...	A. 16.—
Pancalia Latreillella ...	Rabley	Jn. 9.
P. Lewenhoekella	West W., Eastridge	Jn. 11.—Jy. 21.
Glyphipteryx Fuscoviridella	abundant...	Jn. 5.—Jy. 8.
G. Equitella	Fyfield	Jn. 16, F.J.H.J.
G. Fischeriella	abundant...	Jy. 3.—Jy. 1.

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Perittia Obscurepunctella	Manton W.	My. 2.—11.
Antispila Pfeifferella ...	common	My. 1.—28.
Tinagma Sericiellum ...	ditto	My. 1.—Jn. 4.
T. Resplendellum	Bedwyn, larvæ.	
Argyresthia Ephippella ..	Rabley, abundant	Jy. 11.—27.
A. Nitidella	abundant	Jn. 28.—
A. Spiniella	Bedwyn, Littlecote, &c	Jy. 29.—
A. Albistria	abundant	Jn. 28.
A. Semifusca	Marlborough, Ramsbury ...	Jy. 26.—
A. Mendica	common	Jn. 14.—Jy. 8.
A. Curvella	Binck-Knoll, common	Jan. 28, F.J.H.J.
A. Gœdartella	abundant	Jy. 16.—
A. Brockeella	Rabley, Loves W	Jy. 11.—
Cedestis Farinatella ...	Eastridge	Jy. 5.—
Oenerostoma Piniariella ...	ditto.	
Zelleria Insignipennella ...	Ramsbury	A. 14.
Gracilaria Swederella ...	common	My. 5.—Jn. 11.
G. Stigmatella	ditto	A. 8.—24.
G. Elongella	Sav. Forest	A. 15.
G. Tringipennella	Boltsridge W., Marlborough ...	Jn. 14.—Jy. 8.
G. Syringella	abundant on ash	A. 15.—Jn. 4.
G. Auroguttella	common	My. 1.—Jn. 11.
Coriscium Brongniardellum	Ramsbury	A. 5.—21.
C. Sulphurellum	Sav. Forest.	
Ornix Avellanella	abundant	A. 22.—Jn. 8.
O. Anglicella	ditto	A. 30.— Jn.
O. Betulæ	Sav. Forest, bred	My. 15.—Jn. 1.
O. Torquillella	Marlborough, bred	My. 1.—Jy. 2.
O. Guttea	Mildenhall, Ramsbury	Jn. 7.
Coleophora Laricella ...	cases very abundant	Jn. 21.—24.
C. Solitariella	Sav. Forest.	
C. Lutipennella	Boltsridge, &c., common.	
C. Fuscedinella	abundant	Jy. 18.—
C. Viminetella	Manton W., Rabley	Jy. 26.—Jy. 1.
C. Gryphipennella	common.	
C. Nigricella	abundant	Jn. 27.—Jy. 8.
C. Albitarsella ?	Rabley Lane.	
C. Alcyonipennella	Bedwyn.	
C. Discordella	Rabley	Jy. 9.
C. Lineolea ?	Marlborough.	
C. Annulatella	Boltsridge W.	Jy. 31.—

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C. Murinipennella	very common in woods	Jn. 3.—Jy. 11.
Laverna Epilobiella ...	abundant	A. 5.—Jn. 1.
L. Decorella	Ramsbury, Mildenhall	A. 3.—30.
L. Subbistrigella	Ramsbury.	
Chrysoclista Flavicaput	Marlborough, Chiseldon... ...	Jn. 11.—25.
Chrysocorys Festaliella...	generally distributed	My. 2.—Jn. 5.
Stephensia Brunnichella	near Mildenhall	Jn. 7.
Elachista Magnificella ...	Rabley.	
E. Albifrontella	abundant	Jn. 11.—Jy. 18.
E. Luticomella	Rabley, Manton, &c.	Jy. 1.—12.
E. Atricomella	Boltsridge W., &c.	Jn. 7.—21.
E. Nigrella	abundant	My. 1.—Jn. 7.
E. Bedellella	ditto on downs	Jy. 8.—29.
E. Obscurella	very common	My. 13.—Jn. 7.
E. Megerlella	Boltsridge, Rabley, &c.	Jn. 14—Jy. 1.
E. Zonariella	Rabley, Manton W.	
E. Biatomella	Sav. Forest, &c.	My. 8.—Jn. 2.
E. Triatomea	Rabley, &c, common	Jy. 6.—23.
E. Pollinariella	Rabley	Jy. 11.
E. Rufocinerea	abundant	My. 2.—Jn. 16.
E. Cygnipennella	ditto	My. 31.—Jn. 29.
Tischeria Complanella ...	very common	Jn. 9.—27.
T. Marginea	Ramsbury, Marlborough	
Lithocolletis Sylvella ...	common	My. 1.—Jn. 8.
L. Cramerella	very abundant	My. 3.—Jn. 26.
L. Alnifoliella	Bedwyn, common	
L. Lautella	Pewsey	My. 22.
L. Ulmifoliella	Sav. Forest, Benwyn	A. 22.—My. 7.
L. Spinolella	Chiseldon.	
L. Salicicolella	Stype Wood.	
L. Pomifoliella	abundant	A. 4.—My. 26.
L. Spinicolella	Marlborough, &c.	A. 22.—My. 6.
L. Faginella	Sav. Forest, abundant	A. 9.—My. 17.
L. Coryli	Rabley, &c., very common ...	My. 7.—21.
L. Lantanella	common.	
L. Quercifoliella	abundant.	
L. Messaniella	Chilton, ditto	A. 21.—My. 30.
L. Viminiella	Axford	Mr. 27.—My. 2.
L. Nicellii	ditto, and Loves W.	
L. Schreberella	Mildenhall, &c.	Jn. 7.—18.
L. Emberizæpennella ...	Puthall W.	

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L. Tristrigella...	common.	
L. Trifasciella...	ditto	Jn. 11.—Jy. 6.
Lyonetia Clerckella ...	Ramsbury.	
Phyllocnistis Suffusella...	abundant	A. 5.—My. 3.
P. Saligna	ditto	Mr. 28.—My. 3.
Cemiostoma Laburnella	ditto in gardens	Jy. 29.—
Nepticula Atricapitella...	common.	
N. Ruficapitella	ditto.	
N. Oxyacanthella	Marlborough.	
N. Viscerella	ditto.	
N. Anomalella	ditto	A. 21.
N. Septembrella	Rabley W.	
N. Floslactella	abundant	My. 8.—20.
N. Luteella	Sav. Forest.	
N. Angulifasciella	common.	
N. Microtheriella	ditto.	
N. Betulicola	Puthall W.	My. 20.
N. Plagicolella	Rabley Lane.	
N. Tityrella	Sav. Forest	A. 30.—My. 11.
N. Marginicolella	Marlborough, &c.	
N. Aurella	abundant.	

PTEROPHORINA.

Pterophorus Trigonodactylus	Marlborough...	Jn. 18.—Jy. 2.
A. Acanthodactylus ...	Rabley, Boltsridge.	
P. Phaeodactylus	Chilton, Bedwyn	Jy. 19.—
P. Bipunctidactylus ...	Common Frith.	
P. Fuscus	abundant	Jn. 13.—
P. Pterodactylus	ditto.	
P. Microdactylus	West W.	Jn.16,F.J.H.J.—Jy.7.
P. Galactodactylus... ...	common	larve, My.
P. Pentadactylus	abundant...	Jn. 23.—Jy. 21.
Alucita Polydactyla ...	common	Jan. 1.—My. 2.

ADDENDA.

The following species have turned up since the preparation of the above list, and are here added:

Thecla W-album.....not rare in Littlecote Park, flying round the elms.

Nepticula Salicis.....larvæ in Stype Copse.

The total number therefore is 796 which will be probably increased by a score or so before the end of the season.

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NOTES.

I have added a few notes, on some of the most noteworthy species, especially amongst the Micro-Lepidoptera.

Genus Melitæa. This is apparently almost extinct, the species having disappeared from localities in which they were formerly common, without apparent cause.

Procris Geryon. Formerly recorded as *Statices*, the difference not being appreciated until so lately, that it has not been in my power to examine specimens from more than the two localities given. One of the species, however, is found in several others, as West Woods, and Chiseldon; but as it is by no means impossible that the true *Statices* may occur also, I have refrained from giving these as localities without further acquaintance.

Lithosia Aureola. My solitary specimen, taken on a beech-trunk in the Forest, was probably a straggler; I believe it usually occurs amongst larches.

L. Straminеola. This is now known to be a variety of *Griseola.*

Hypercompa Dominula. A recent introduction on the authority of Mr. H. Manders, who states that it is common in July in a locality in the West Woods.

Acronycta Alni. The larva has been twice found, and one imago reared.

Caradrina Morpheus and *Noctua Depuncta*, previously recorded, have been erased, being founded on varieties of other species.

Emmelesia Blandiata. I am informed that this species was also mistakenly inserted, and have therefore removed it; it is exclusively Northern.

Eupithecia Plumbeolata. Wrongly recorded under the name of *Valerianata*, which I have corrected; the true *Valerianata* does not occur.

E. Nanata. The only specimen yet found was taken at light in the College, several miles from any heath; it might perhaps have been introduced with plants into the Botanical Garden. But *Chesias Spartiata* is in an exactly similar predicament.

Phibalapteryx Polygrammata was, I am told, inserted in error from specimens of *Lignata.*

Achroia Grisella. Occurs in several gardens, but not usually in sufficient abundance to do any real damage.

Antithesia Ustulana. Not rare in Rabley Copse, settled on the leaves; it has scarcely the habits of a true *Antithesia*, being readier to fly.

L. Sorbiana. Flies wildly towards dusk, in the same way as *Roborana* and *Xylosteana*, but a month earlier.

C. Scopoliana. This insect is variable, but I fancy I have, among its varieties, specimens of the more pointed-winged *Fulvana*, taken near the alder-copse at Bedwyn; but they are not in sufficiently good condition to enable me positively to insert the species.

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D. Simpliciana. Both here, and at Newbury, where I have also taken the species, it is always beaten from *Clematis Vitalba*; the connection is not obvious, unless it affects the blossoms.

S. Nævana. Evidently not confined to holly, being found commonly along all hedges; the larva doubtless feeds in the shoots of sloe.

S Internana. I have not seen specimens of this species, which was named by Mr. Stainton, and am not sure of the locality.

E. Proximana. With this occurs also *Nigricana*, the two running into one another by insensible gradations; they are, I believe, now generally united.

A. Luridana. I am rather diffident in inserting this species, as it has only hitherto been recorded from Westmoreland, but the specimens agree exactly with the description in the Annual, and no other. I took a very few specimens only, flying at dusk, at Rabley Wood and Ramsbury.

E. Subroseana. Very local, being confined to a small patch of cut wood, but abundant there.

M. Fastuosella. I believed discovered by Mr. Stainton in Manton Copse, and not found elsewhere; but the nut-bushes in which the larva used to occur are cut down, and I could not find it this year.

H. Plumbellus. Rather oddly, this species is much the commonest of the genus, in fact commoner than the other two together.

A. Decemguttella. Probably common wherever the *Lithospermum* grows; I have taken it at Rabley Wood, Ramsbury, and the Littlecote Woods, which are 10 miles apart, in fact wherever I have looked for it. It is easier found in the larva state, but the moths are not rare at dusk among the food plants.

G. Ligulella. The only locality for this, which is very circumscribed, is remarkable for the entire absence of papilionaceous plants.

P. Latreillella. If these are distinct species, both occur without doubt, but I am not certain whether in the same localities; I have taken *P. Lewenhoekella in cop.*

A. Literella. One specimen has occurred almost within our district, but it is now generally acknowledged to be only a variety of *Gædartella.*

* *O. Fagivora.* Stainton says "Distinguished by the ochreous inner margin." I have taken specimens with the inner margin decidedly ochreous in Savernake Forest, in places where the only trees were beech and birch, on one or other of which it must have fed; but never having noticed the larva, I hesitate to insert a species not yet recognised with certainty as British.

C. Nigricella. Cases very scarce on hawthorn, very common on birch.

C. Arbitarsella. Mines of a *Coleophora* on *Calamintha* were returned by Mr. Stainton as probably of this species, but I have not found it on its ordinary food-plants.

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L. Nicellii. Though the mines are not rare, I have not yet succeeded in breeding the imago, every larva being invariably ichneumoned.

E. MEYRICK.

P.S.—Since placing this in the printer's hands the following species have been added :—

Acronycta Tridens... ... ... larva near Chilton.
Carpocapsa Funebrana... ... larvae common in plums, Ramsbury.

BOTANICAL NOTICES.

We have been enabled to record the date of first flowering of almost all the plants near Marlborough. The few which have escaped observation do not occur within an ordinary walk of the College.

As usual "by" indicates that the plant, when observed, had probably been in flower a day or two. An asterisk (*) indicates *cultivated* specimens.

Names of those whose Initials occur in the following List, or who have otherwise aided in perfecting the Tables :—

R.H.A. ...	R. H. Alexander.	F.M.D. ...	F. M. Drysdale.
J.T.A.... ...	J. T. Arnold.	J.W.D. ...	J. W. Dudding.
C.S.B. ...	C. S. Baily.	F.J.E.... ...	F. J. Ellis.
T.G.B. ...	T. G. Balfour.	H.A.E. ...	H. A. Evans, Esq.
C.H.L.B. ...	C. H. L. Baskerville.	F.H.E. ...	F. H. Evaus.
C.S.B. ...	C. S. Bengough.	H.W.E. ...	H. W. Everingham.
E.B.	E. Bryans.	F.W.F. ...	Rev.Dr.Farrar,F.R.S
C.M,B. ...	C. M. Bull, Esq.	E.F.	E. Farrar.
E.P.C. ...	E. P. Close.	H.F.	Miss H. Farrar.
C.E.C. ...	C. E. de Coetlogon.	R.A.F. ...	R. A. Farrar.
W.C.	Mr. W. Coleman.	J.A.F. ...	J. A. Fellowes.
G.H.A.C. ...	G. H. A. Connor.	J.R.F. ...	J. R. Flude.
H.G.A.C. ...	H. G. A. Conuor.	A.W.F. ...	A. W. Flux.
R.D.	R. Denman.	A.F.	A. Fountain.
W.H.D. ...	W. H. Dobie.	H.F.	H. Francis.
R.W.D. ...	R. W. Doyne.	E.R.G. ...	E. R. Gardiner.

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F.G. ...	... F. Gordon.	H.S.S.	... H. S. Sankey.
W.M.G.	... W. M. Grove.	H.A.S.	... H. A. Satchell.
T.A.H.	... T. A. Hall.	G.W.W.S.	... G. W. W. Savile.
V.H. ...	... V. Harke.	G.J.S.	... G. J. Scott.
F.G.H.	... F. G. Heaven.	T.N.H.S.	... T. N. H. Smith.
F.W.H.	... F. W. Highton.	A.D.S.	... A. D. Smithe.
A.C.H.	... A. C. Hilton, Esq.	P.B.S.	... P. B. Smithe.
W.G.H.	... W. G. Hughes.	J.S. ...	... Rev. J. Sowerby.
E.H....	... E. Hunter.	C.S. ...	... C. Square.
O F.J.	... O. F. Jacson.	A.D.S.	... A. D. Stallard.
H.C.L.	... H. C. Legh.	E.H.S.	... E. H. Stephenson.
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H.T.L.	... H. T. Lucas.	M.R.S.	... M. R. Stubbs.
F.M.L.	... F. M. Lucas.	G.C.S.	... G. C. Swan.
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E.P.M.	... E. P. Martin.	S.F.T.	... S. F. Townsend.
E.M....	... E. Meyrick.	A.E.T.	... A. E. Townsend.
W.M.H.M.	... W. M. H. Milner.	C.E.V.	... C. E. Vaughan.
K.W.M.	... K. W. Murray.	F.D.V.	... F. D. Vigue.
L.F.P.	... L. F. Paul.	M.N.W.	... M. N. Whiting.
C.S.P.	... C. S. Peach.	W.H.W.	... W. H. Williams.
R.P. ...	... R. Peacock.	D.W. ...	... D. Womersley.
S.B.P.	... S. B. Pemberton.	W.H.E.W.	... W. H. E. Worship.
H.S.P.	... H. S. Philpot.	R.M.Y.	... R. M. Yetts.

Thalictrum
  flavum ..... *Jn. 21—Jn. 1, F.E.T.
  *minus ..... Jn. 8.
Anemone
  nemorosa ... Mch. 9, R.W.D.
  *hepatica ... Jan. 24.
Myosurus
  minimus ... May 22.
Ranunculus
  pseudo-fluitans ..... Ap. 11, E.M. (Ramsbury) Ap. 20, F.E.T.
  heterophyllus Ap. 27, C.M.B.
  Drouetii..... May 24, S.F.T., and W.H.W.
  peltatus..... Ap. 30, P.T.
  circinatus ... by Jn. 13.
  sceleratus ... Jn. 8.

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flammula ... Jn. 2.
ficaria ..... Feb. 17, O.F.J.
auricomus... Ap. 11, F.E.T.
acris ..... Mch. 12, F.E.T.; Ap. 11, F.E.T.
repens ..... Feb. 14, Mch. 4, Ap. 11, F.E.T.
bulbosus ... Jan. 26, A.E.T.; Ap. 11, F.E.T.
arvensis..... *May 16, May 22.
parviflorus May 24.

Caltha
palustris ... Feb.27,F.E.T.; Mar. 14,S.F.T.,& W.H.W.

Trollius
*europæus May 8.

Eranthis
*hyemalis ... full, Jan. 24.

Helleborus
viridis ..... Feb. 15., F.E.T.

Aconitum .....
napellus ... Jn. 7 (full), E.M.

Aquilegia .....
*vulgaris ... Ap. 27.

Papaver
Argemone ... Jn. 13, G.W.D.L.
Rhœas .. ... Jn. 13, O.F.J., &c.
(var) strigosum ..... Jn. 28, C.S.B.
dubium ..... Jn. 8.
Lecoqii ... Jn. 28, C.S.B.
somniferum *about Jy. 8.
*orientale ... Jn. 7.

Chelidonium
majus..... Ap. 27.

Corydalis
*solida ..... Mch. 27, G.W.D.L.

Fumaria
officinalis ... Ap. 11, C.M.B.; Ap. 29, W.M.H.M.

Dielytra
*spectabilis Ap. 27.

Cheiranthus
*cheiri ..... Jan. 24.

Nasturtium
officinale ... Jn. 8, F.E.T.
palustre..... by Jn. 6, F.E.T.

Barbarea
vulgaris..... Ap. 30, E.M.

Arabis
hirsuta ..... *May 22, by May 26; C.E.T.
*turrita..... Ap. 27.

Cardamine
hirsuta ..... Mch. 24, G.W.D.L.
pratensis ... Ap. 11, F.E.T.; Ap. 19, C.M.B.

Sisymbrium
officinale ... May 2, W.M.H.M.
thalianum ... by May 6.

Alliaria
officinalis ... Ap. 25.

Brassica
oleracea..... May 6.
campestris May 3.
napus..... Ap. 12, F.E.T.

Sinapis
arvensis..... Ap. 20, F.E.T.
alba ..... *May 8.

Thlaspi
arvense ..... *May 4.

Aubrietia
*purpurea... Jan. 24.

Draba
verna ... . Mch. 26, G.W.D.L.

Armoracia
*rusticana Jn. 13, W.H.E.W., &c.

Lepidium
campestre... May 29.

Capsella
bursa-pastoris ..... Jan. 26, Feb.11, Mch.

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4, Ap. 3, F.E.T.

Senebiera
coronopus ... May 25.
Camelina
sativa ..... Jy. 8, F.E.T.
Isatis
*tinctoria ... May 18.
Raphanus
Raphanistrum ..... May 22, G.W.D.L.
Reseda
lutea ..... Jn. 5.
luteola ..... Jy. 1, F.E.T.
Helianthemum
vulgare ..... May 15, G.W.D.L.
Viola
odorata ..... Mch. 12, A.W.F., and M.R.S.
hirta ..... Ap 3, G.W.D.L.
Reichenbachiana May 4.
Riviniana ... Ap. 30, F.E.T.
canina ..... *May 4, full May 29, F.E.T.
tricolor ..... *May 11, May 22, H.W.T.
(var) arvensis ..... Mch. 20, A.W.F.; Ap. 1, T.N.H.S.
Polygala
vulgaris..... May 4, W.M.H.M.
Cucubalus
*baccifera Jy. 13.
Silene
inflata ..... Jn. 12.
Lychnis
flos-cuculi... May 31, A.W.F., and C.H.L.B.
vespertina... *May 21, May 29.
diurna ..... Ap. 22, F.E.T.
Githago..... Jy. 1, F.E.T.
Sagina
procumbens May 24, W.M.H.M.
Arenaria
trinervis ... by May 6, C.E.V.
serpyllifolia May 25, W.M.H.M.
Stellaria
media..... all the year.
Holostea ... Ap. 11, F.E.T.
graminea .. May 17, W.M.H.M.
uliginosa ... May 17.
Cerastium
glomeratum May 6.
triviale ..... Mch.10,A.E.T.; Mch. 30, O.F.J.; Ap. 29, W.M.H.M.
*arvense ... May 3.
Malva
moschata ... Jy. 7, G.W.D.L.
sylvestris ... Mch. 11, A.E.T.; May 13, G.W.D.L.
rotundifolia May 28, G.W.D.L.
Tilia
parvifolia ... Jy. 17, P.T.
Hypericum
*Androssemum Jn. 25.
quadrangulum Jy. 19.
perforatum full bud Jn.28,T.N.H.S. Jy. 1, F.E.T.
humifusum Jn. 25, G.W.D.L.
hirsutum ... Jn. 28, C.H.M.T.
pulchrum ... Jy. 8, F.E.T.
Acer
campestre... May 15, G.W.D.L.
Pseudo-platanus..... Ap. 27.
Æsculus
Hippocastanum May 3, A.E.T.
Geranium
*Phæum ... May 9.
*sylvaticum May 24.
pratense Jn. 2, S.F.T.

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*sanguineum May 30.
dissectum ... *May 12, May 13.
columbinum May 31.
rotundifolium May 22.
molle ..... Ap. 27, E.M., (Ramsbury), May 2, G.W.D.L.
lucidum.. ... May 12, A.W.F.
Robertianum Ap. 28, F.E.T.
pyrenaicum *Ap. 27.

Erodium
cicutarium *Ap. 3.

Linum
Catharticum Jn. 2, P.T. & A.E.T.

Oxalis
acetosella ... Ap. 18, C.M.B.

Euonymus
europæus ... May 29, G.W.D.L.

Staphylea
*pinnata ... May 2.

Rhamnus .....
catharticus May 31.

Ulex
europæus ... Jan. 21.

Genista
tinctoria ... *Jn. 17, Jy. 6, W.M.H.M. & F.J.E.

Sarothamnus
scoparius ... May 6.

Ononis
arvenis ..... Jy. 8, F.E.T.
campestris Jy. 17.

Melilotus
officinalis ... Jy. 10.

Medicago
lupulina ... May 1, C.M.B.

Trifolium
pratense ... May 2, W.M.H.M.
*incarnatum May 31, C.S.P.
repens ..... May 22, G.W.D.L.
procumbens Jn. 12.
minus ..... May 13, F.E.T.

Lotus
corniculatus May 13, F.E.T.
major..... Jy. 1, F.E.T.

Anthyllis
vulneraria ... May8, S.F.T&W.H.W.

Astragalus
glycyphyllos full bud Jn. 28, O.F.J.

Vicia
hirsuta ..... Jn. 3, F.E.T.
tetrasperma Jn 21, G.W.D.L.
Cracca ..... Jy. 1, F.E.T.
sylvatica ... Jn. 14, F.W.F.
sepium ... .. Ap. 24, (Savernake) Ap. 28, F.E.T.
sativa ..... May 13.

Lathyrus
pratensis ... Jn. 3, F.E.T.
macrorhizus Ap. 30, G.W.D.L.

Hippocrepis
comosa ..... May 22, G.W.D.L.

Onobrychis
sativa..... Jn. 3, G.W.D.L.

Cytisus
*Laburnum May 17.

Prunus
spinosa ..... Ap. 10, C.M.B.
*Padus ..... May 13.
cerasus ..... by Ap. 19, C.M.B.

Spiræa
ulmaria ..... by Jn. 23, F.E.T.
Filipendula Jn. 17, by Jn. 29, A.W.F. & T.A.H.

Poterium
sanguisorba May 8, G.W.D.L.

Agrimonia
eupatoria ... Jn. 26, G.W.D.L.

Alchemilla
vulgaris * Ap. 27, May 4. T.N.H.S.

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arvensis ..... full May 9, W.M.H.M.
Sibbaldia
*procumbens May 2.
Potentilla
anserina ... May 18, W.M.H.M.
reptans ..... Jn. 13, W.H.E.W.
Tormentilla May 11, W.M H.M. & H.C.L.
fragariastrum Mch.12, F.M.L.&E.L.L.
Fragaria
vesca ..... May 10, F.E.T.
Rubus
Idæus..... Jn. 12.
discolor..... Jy. 13, P.T.
corylifolius Jn. 12.
cæsius ..... May 31.
Geum
urbanum ... May 11, W.M.H.M. & H.C.L.
intermedium * Ap. 27.
rivale..... * Ap. 3.
Rosa
micrantha .. Jn. 16, F.M.D.
canina ..... Jn. 13, G.H.A.C., &c.
arvensis..... Jn. 27.
Cratægus
oxyacantha May 10, C.E.V.
Pyrus
malus ..... May 10, C.E.V.
*aucuparia May 13.
*Japonica ... Mch 3, G.W.D.L.
*Apricot ... Mch. 7, G.W.D.L.
*nectarine... full Mch. 31, W.H.M.
*apple ..... May 3.
Peplis
portula ..... by Jy. 1, F.E.T.
Epilobium
angustifolium * Jy. 6.
parviflorum Jy. 8, F.E.T.
montanum Jn. 12, P.T.
quadrangulum Jy. 8.
palustre . ... Jy. 8.
obscurum ... Jy. 19.
Circæa
lutetiana ... by Jn. 28.
Bryonia
dioica ..... Jn. 22, C.S.B.
Spergula
arvensis..... * bud Jn. 8, Jn. 13.
Scleranthus
annuus ..... * Jn. 8, Jn. 13.
Sedum
*Rhodiola... My. 4.
reflexum .. c.bud Jy. 7, G.W.D.L.
acre ..... Jn. 28.
Ribes
Grossularia full Ap. 25.
rubrum ..... full Ap. 30, W.M.H.M.
nigrum ..... May 4.
*sanguineum Mch. 25.
Saxifraga
*umbrosa ... May 11.
*hirsuta..... May 25.
tridactylites Ap. 25.
granulata ... May 1, C.M.B.
*cæspitosa Ap. 30.
*crassifolia Ap. 2.
Chrysosplenium
*oppositifolium ... full Ap. 27.
Philadelphus
*Coronarius about Jn. 12.
Sanicula
europæa ... May 5, A.E.T.
Heliosciadium
inundatum Jn. 13, G.W.D.L.
nodiflorum... Jy. 1, F.E.T.
Ægopodium
podagraria Jn. 8, F.E.T.
Bunium
flexuosum ... May 13, E.C.M.
Pimpinella

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saxifraga ... Jn. 3, G.W.D.L.
Sium
angustifolium Jy. 10, W.G.H.
Bupleurum
*falcatum ... about Jn. 17.
Œnanthe
crocata ..... May 17.
fluviatilis ... by Jy. 1, F.E.T.
Æthusa
cynapium ... Jan. 29, A.E.T.; *Jn. 1; Jn. 28, P.T.
Haloscias
*scoticum ... about Jn. 17.
Meum
*Athamanticum .. ... May 22.
Angelica
sylvestris ... c. bud Jy. 19.
Pastinaca
sativa ..... Mch. 11, May 3, May 24, G.W.D.L.
Heracleum
sphondylium Ap. 27.
Daucus
carota ..... Jn. 25, G.W.D.L.
Silaus
pratensis ... by Jn. 28, F.E.T.
Torilis
Anthriscus Jy. 7, G.W.D.L.
Scandix
pecten ..... May 6, O.F.J.
Anthriscus
sylvestris ... Jan. 26, A.E.T.; Mch. 10, W.M.H.M.; Mch. 26, A.L.
Chærophyllum
temulum ... May 3.
Adoxa
moschatellina Mch. 9, W.M.H.M.
Cornus
sanguinea .. Jn. 13.
*mascula ... Jan 24.
Sambucus
nigra ..... Jn. 6, G.W.D.L.
Viburnum
lantana ..... May 5, G.W.D.L.
Opulus ..... May 29, G.W.D.L.
Lonicera
*caprifolium by May 22, G.W.D.L.
Periclymenum ..... Jn. 21, F.E.T.
Symphoricarpos
*racemosus Jn. 14, H.W.T.
Sherardia
arvensis..... May 2, W.M.H.M.
Asperula
cynanchica Jn. 21, P.T.
odorata ..... * May 4, May 10, S.F.T. & W.H.W.
Galium
cruciatum ... by Ap. 27.
Aparine..... May 15, G.W.D.L.
Mollugo..... Jn. 27.
verum ..... Jn. 28, P.T.
saxatile ..... Jn. 12, C.S.P.
uliginosum Jn. 28.
palustre..... Jn. 26, G.W.D.L.
tricorne..... Jy. 1, F.E.T.
Centranthus
*ruber ..... *May 10.
Valeriana
officinalis ... Jn. 16, F J.H.J.
dioica..... . by Ap. 27.
Valerianella
Olitoria ..... Ap. 29, G.W.D.L.
dentata ... .. Jy. 19, W.M.H.M. & F.G.H.
Auricula ... Jy. 10.
Dipsacus
sylvestris ... *by Jy. 19.
Knautia
arvensis..... Jn. 13, W.H.D.

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Scabiosa
succisa ..... Jn. 18, G.W.D.L.
columbaria Jy. 3.
Petasites
vulgaris..... Feb. 26, F.E.T.
Tussilago
Farfara..... Mch. 11, W.M.H.M. and H.C.L.
Erigeron
acris ..... *by June 17.
Bellis
perennis..... all the year.
Inula
*Helenium Jy. 12.
Pulicaria
dysenterica cold. bud Jy. 19.
Achillea
*tomentosa May 29.
Millefolium May 28, F.E.T.
Anthemis
arvensis..... Jn. 13.
cotula ..... Jy. 8.
Matricaria
inodora ..... Jan. 26, Feb. 11, Mch. 10, May 22, G.W.D.L.
Chrysanthemum
Leucanthemum ..... May 13, F.E.T. (Sav.)
segetum..... full fl. Jy. 12.
Tanacetum
vulgare ..... bud Jy. 17, G.W.D.L.
Filago
germanica... Jy. 11, G.W.D.L.
Gnaphalium
uliginosum Jy. 19, T.N.H.S.
Doronicum
*Pardalianches ..... full Ap. 27.
Senecio
vulgaris..... all the year.
Jacobæa ... Jn. 20, G.W.D.L., E.M.
aquaticus ... Jn. 24.
Serratula
tinctoria ... by Jy. 14, S.F.T.
Centaurea
nigra ..... Jn. 24.
cyanus ..... *Jn. 17.
scabiosa..... Jn. 12. Jn. 28, A.W.F.
Carduus
nutans ..... Jn. 7, W.G.H.
crispus ..... May 25, A.W.F.
lanceolatus Jy. 10, H.G.A.C.
arvensis..... Jy. 10.
palustris ... May 6.
acaulis ..... Jy. 9, G.W.D.L.
Silybum
*marianum Jn. 21.
Lapsana
communis ... Jn. 22, C.S.B.
Cichorium
Intybus ..... *Jy. 14.
Hypochœris
radicata..... May 13, J.S.
Apargia
hispida ..... Jn. 10.
autumnalis Jn. 12.
Tragopogon
minor..... May 25, W.M.H.M.
Helminthia
echioides ... *by Jy. 15.
Leontodon
taraxacum .. all the year.
Sonchus
oleraceus ... Jn. 12.
asper ..... May 22.
arvensis..... Jy. 12, A.E.T., O.F.J & J.V.H.
Mulgedium
alpinum..... Jy. 7.
Crepis
virens..... Jn. 2, W.M.H.M.
Hieracium

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pilosella..... May 13.
vulgatum ... Jy. 10. W.G.H.

Phyteuma
orbiculare ... Jy. 26, H.S.S.

Campanula
glomerata ... Jn. 9, E.M.
Trachelium full Jy. 17, A.E.T., & E.P.M.
rotundifolia Jy. 11, G.W.D.L. Jy. 12, N.M.

Specularia
hybrida ... Jn. 28, T.N.H.S.

Calluna
vulgaris ... cold. bud Jy. 19.

Ilex
aquifolium May 17, W.M.H.M.

Ligustrum
vulgare ..... Jn. 27.

Fraxinus
excelsior ... not out, Ap. 14. full Ap. 19, F.E.T.

Syringa
*vulgaris ... My. 1, G.W.D.L.

Vinca
minor ..... *Jan. 28.
major..... .. full Mch. 10.

Ethyræa
centaurium Jy. 1, F.E.T.

Chlora
perfoliata ... Jy. 19, W.M H.M. & F G.H.

Gentiana
Amarella ... by Jn. 18, G.W.D.L.
*acaulis ..... full Mch.27, G.W.D.L.

Menyanthes
trifoliata ... May 10.

Polemonium
cæruleum ... May 22.

Convolvulus
arvensis ... Jn. 21, E.M.
sepium ..... Jy. 25, A.D.S.

Cynoglossum
officinale ... Jn.7, A.E.T. & E.C.M.

Borago
*officinalis... by Ap. 27.

Lycopsis
arvensis..... Jn. 13, G.W.D.L.

Symphytum
officinale ... Ap. 20, F.E.T.
asperrimum Jn. 12.

Echium
vulgare ..... Jn. 18, E.M.

Pulmonaria
*officinalis... Mch. 27, G.W.D.L.

Lithospermum
officinale ... May 31.
arvense ..... May 4, W.M.H.M.

Myosotis
palustris ... Jn. 13, G.W.D.L.
arvensis ... Ap. 18, C.M.B.
collina ..... May 1, C.M.B.
versicolor ... May 6.

Solanum
Dulcamara Jn.7, A.E.T. & E.C.M.

Atropa
*Belladonna Jn. 17.

Hyoscyamus
niger ..... by May 31.

Lycium
*barbarum by May 29.

Orobanche
elatior ..... by Jy. 1.
minor.. ..... Jn. 5, C.S.P.

Lathræa
squamaria... Mch. 30, G.C.S. and E.R.G.

Verbascum
Thapsus..... Jn. 13, F.G.H.
nigrum ..... by Jy. 27, P.T.

Digitalis
*purpurea... Jn. 17.

Linaria

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cymbalaria May 31.
minor..... *Jn. 1, Jn. 8.
vulgaris..... Jn. 23, F.E.T.
elatine ..... Jy. 19, T.N.H.S.
spuria ..... Jy. 19.

Scrophularia
nodosa ..... *Jn. 4, Jn. 5.
aquatica ... Jn. 18, G.W.D.L.
*vernalis ... full May 10, O.F.J.

Melampyrum
pratense ... May 31.

Pedicularis
sylvatica ... May 31.
palustris ... full Jy. 12.

Rhinanthus
Crista-galli May 22, A.E.T.

Euphrasia
officinalis ... May 27, S.F.T. and W.H.W.
odontites ... Jn. 27, G.W.D.L.

Veronica
scutellata ... full Jy. 19, P.T.
Anagallis ... Jn. 10.
Beccabunga May 17, (Chilton), May 31.
Chamædrys Ap. 19, F.E.T., Ap. 21, C.M.B.
montana ... by May 24.
officinalis ... Jn. 5, H.F.
serpyllifolia Ap. 30, G.W.D.L.
arvensis..... May 4, W.M.H.M.
agrestis..... Mch. 25.
polita ..... all the year.
Buxbaumii all the year.
hederifolia .. all the year.

Mentha
rotundifolia * Jy. 28.
arvensis ... Jy. 26, P.T.

Salvia
verbenaca ... May 10, E.M.

Scutellaria
galericulata by Jy. 1. F.E.T.

Thymus
serpyllum ... Jn. 8, G.W.W.S. & F.W.Fo.
chamædrys by Jn. 28, P.B.S.

Calamintha
acinos ..... * June 15.
clinopodium July 10, H.G.A.C.

Prunella
vulgaris..... by Jn. 23, F.E.T.

Nepeta
Glechoma ... Mch. 17, G.W.D.L.
cataria ..... * Jy. 12.

Lamium
amplexicaule May 2, G.W.D.L.
purpureum all the year.
album ..... all the year.
*maculatum by Ap. 27.
Galeobdolon May 4, W.M H.M.

Galeopsis
Ladanum ... Jn. 28, P.T., Jy. 10, W.G.H.
Tetrahit..... Jy.7,F.E.T.&G.W.D.L.

Stachys
Betonica ... Jn. 28, O.F.J.
sylvatica ... Jn. 13, W.M.H.M.

Ballota
fœtida ..... Jy. 3.

Teucrium
scorodonia... full Jy. 26, P.T.

Ajuga
reptans ..... May 5, W.G.H.

Verbena
officinalis ... Jy. 27, W.M.H.M.

Primula
vulgaris..... Jan. 15, (Ramsbury) E.M., Feb. 14.
veris ..... Mch. 26, S.F.T. & W.H.W. Ap. 6, C.M.B.

Lysimachia

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Nummularia Jn. 26, G.W.D.L.
nemorum ... Jn. 16, E.M.
Anagallis
arvensis..... May 22, G.W.D.L.
Plantago .....
lanceolata... May 1.
media ..... May 31.
major..... Jn. 8, W.M.H.M. & F.G.H.
Chenopodium
album ..... Jy. 17, D.W.
Bonus-Henricus..... .. May 4, W.M.H.M.
Atriplex
angustifolia Jy. 17.
Rumex
conglomeratus..... Jn. 30.
sanguineus Jy. 8.
obtusifolius May 31.
crispus ..... Jn. 12.
Hydrolapathum ..... Jy. 10.
acetosa ..... May 6, C.E.V.
acetosella ... May 6.
Polygonum
Bistorta ... coloured bud May 25, H.W.E., Jn. 7, H.W.E.
amphibium Jn. 13, G.W.D.L.
Persicaria... Jy. 10, W.G.H.
aviculare ... Jn. 12.
convolvulus Jy. 1.
Fagopyrum about Jn. 12, F.M.D.
Daphne
*mezereum Feb. 10.
Laureola .. *Feb. 1, out a few days.
Buxus
sempervirens Mch. 15, W.G.H.
Euphorbia
Helioscopia Ap. 15, C.M.B., Jn. 28, O.F.J.
amygdaloides Ap. 29, G.W.D.L.
Peplus ..... Jan. 26, Feb. 17, May 11.
exigua ..... Jy. 10, W.G.H.
Mercurialis
perennis ..... Feb. 11, A.E.T.
Callitriche
verna..... May 1.
Urtica
urens..... Jan. 27, May 8.
dioica..... .. Jn. 1, W.M.H.M., and F.G.H.
Ulmus
suberosa ... Mch. 11, A.E.T.
montana ... bud Mch. 11.
Salix
caprea ..... Mch. 10, A.E.T.
viminalis ... Mch. 25.
purpurea ... Ap. 25.
fragilis ..... May 1.
triandra..... May 17.
Betula
glutinosa ... May 2, W.M.H.M.
Fagus
sylvatica ... May 3, G.W.D.L.
Quercus
Robur ..... May 15, G.W.D.L.
Corylus
avellana ..... full Jan. 26.
Carpinus
Betulus ..... just over May 3.
Taxus
baccata ..... Jan. 25.
Juniperus
communis ... May 6, full.
Pinus
sylvestris ... May 17.
Larix
Europæa ... Ap. 3, F.E.T.
Paris
quadrifolia May 1.
Tamus

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communis ... Jn. 2, F.G.H.

Orchis

morio..... May 10, G.W.D.L.

mascula..... Ap. 19, C.M.B.

ustulata..... May 31, S.F.T., and W.H.W.

maculata ... Jn. 2, P.T., and C.S.

latifolia..... *May 24, Jn. 2.

incarnata ... by Jn. 2.

pyramidalis Jn. 28, O.F.J.

Gymnadenia

conopsea ... Jn. 13, W.M.H.M., and F.G.H.

Habenaria

viridis ..... by Jy. 10, W.G.H.

bifolia ..... Jn. 27, (full).

Chlorantha Jn. 2, L.F.P. & R.D.

Ophrys

apifera ..... Jn. 28, A.E.T., & R.F.

Listera

ovata... ..... May 17, (Chilton), May 24, F.W.F.

Neottia

nidus-avis... Jn. 5.

Iris

Pseudacorus Jn. 2, W.M.H.M.

Crocus

*vernus..... Jan. 24.

Narcissus

pseudo-narcissus..... Mch. 10, G.W.D.L.

Leucojum .....

*Æstivum... Ap. 24.

Galanthus

nivalis ... .. Jan. 15 (Ramsbury), E.M., Jan. 24.

Convallaria

*majalis ... by May 22.

Polygonatum

multiflorum bud, May 15, C.E.T.

Ruscus

aculeatus.... all the year.

Fritillaria

*meleagris Ap. 27.

*Imperialis full, Ap. 27.

Ornithogalum

*umbellatum ..... May 3.

Scilla

*sibirica ... Feb. 10.

Allium

vineale ..... Jy. 10.

ursinum..... May 6.

*moly ..... Jn. 8.

Endymion

nutans ..... Ap. 17, C.M.B.

Juncus

effusus ..... Jy. 19.

conglomeratus ..... Jy. 19.

glaucus ..... Jy. 19.

acutiflorus .. Jy. 1, F.E.T.

lamprocarpus ... Jy. 8.

bufonius ... Jy. 12.

Luzula

pilosa ..... Ap. 1.

campestris Ap. 3, F.E.T.

multiflora ... bud, Ap. 29, T.G.B.

Alisma

plantago ... Jy. 8.

Sparganium

ramosum ... Jy. 17, G.W.D.L.

simplex..... Jy. 19, P.T.

Arum

maculatum Ap. 20, F.E.T.

Potamogeton

natans ..... Jn. 12.

perfoliatus Jn. 13.

pectinatus... Jn. 13.

Eleocharis

palustris ... Jn. 10.

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Eriophorum
augustifolium May 17.
Carex
vulgaris..... May 17 (full)
divulsa ..... by Ap. 27.
disticha ..... by Jn. 2.
vulpina ..... Jn. 3.
paniculata... full May 13.
*intermedia Jn. 10.
præcox ..... Ap. 29, C.M.B.
flava ..... May 17.
remota ..... June 13.
glauca ..... Ap. 20, F.E.T.
sylvatica ... May 4, W.M.H.M.
hirta ..... May 25, E.F.
paludosa ... bud May 6.
riparia ..... Ap. 28, E.M., May 1, G.W.D.L.
Phalaris
canariensis Jn. 16, F.E.T.
arundinacea Jn. 20.
Anthoxanthum
odoratum ... Ap. 20, F.E.T.
Phleum
pratense..... Jn. 12.
Alopecurus
pratensis ... Ap. 3, F.E.T., Ap. 20.
geniculatus Jn. 8, F.E.T.
agrestis ..... May 4, F.E.T.
Milium
effusum ..... May 31.
Agróstis
vulgaris ..... Jn. 20.
alba ..... Jy. 17.
Holcus
lanatus ..... May 22.
mollis..... .. Jn. 28.
Aira
cæspitosa ... Jn. 10.
flexuosa ..... Jn. 27, (full).
caryophyllea over by Jn. 27.
Trisetum
flavescens ... May 31.
Avena
pratensis ... May 22.
pubescens ... May 13, F.E.T.
Arrhenatherum
avenaceum May 31.
Kœleria
cristata ..... June 7.
Melica
uniflora ..... Jn. 1, W.M.H.M., and F.G.N.
Poa
annua ..... all the year.
nemoralis ... Jn. 27.
trivialis..... May 22.
pratensis ... Ap. 28, F.E.T.
Glyceria
aquatica ... Jy. 1, F.E.T.
fluitans ..... Jn.7, A.W.F.&F.W.H.
plicata ..... Jn. 3, F.E.T.
Catabrosa
aquatica..... May 22.
Triodia
decumbens over by Jy. 17.
Briza
media..... May 30, C.H.M.T.
Cynosurus
cristatus ... May 25, H.F.
Dactylis
glomerata ... May 2.
Festuca
sciuroides ... by Jn. 6.
ovina ..... May 13.
rubra ..... May 7, A.E.T.
gigantea ... Jy. 10, H.G.A.C.
arundinacea Jn. 28, P.T.
pratensis ... Jn. 10.
Brachypodium
sylvaticum Jn. 20.
Bromus

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erectus ..... May 3.
asper ..... May 31.
sterilis ..... Ap. 25.

Serrafalcus
racemosus .. Jn. 10.
commutatus Jn. 12.
mollis ..... Ap. 25.

Triticum .....
caninum ... Jn. 24.
repens ..... Jn. 24.

Hordeum
pratense ... Jn. 28. F.E.T., P.T.
murinum ... full Jy. 10, D.W.

Lolium
perenne ..... May 6.

Equisetum
arvense ..... Ap. 8, F.E.T.
maximum Just over May 1.
limosum ... May 6, A.E.T.
palustre..... May 17.

Botrychium
Lunaria..... May 8, H.S.P.

Ophioglossum
vulgatum ... Jn. 2, A.C.H.
Rye ..... May 16, G.W.D.L.
Wheat ..... Jn. 21, G.W.D.L.
Oats ..... Jn. 21, G.W.D.L.
Barley ..... Jn. 27.

NEW SPECIES AND LOCALITIES.

* *Aconitum napellus*—Found at Ramsbury by E.M. Probably an escape, though at some distance from any garden.

Camelina sativa—Found near the College by F.E.T.

Linum usitatissimum—Specimen found near the College, in seed, by F.E.T.

* *Pyrus Pyraster*—Specimen found by W.M.H M. near Ramsbury, and by G.C.M. near White Horse Down.

* *Galium tricorne*—Found by F.E.T. at Great Bedwyn; specimens also found between Rabley and Mildenhall by H.G.A.C.

* *Valerianella Auricula*—Field near Pentawick.

* *Chlora perfoliata*—Bedwyn, W.M.H M. and F.G.H.

* *Antirrhinum Orontium*—Ramsbury, July 2, 1836, *Mr. F. Meyrick.*

Linaria elatine—Bedwyn, T.N.H.S.

Linaria spuria—Bedwyn, P.T.

Linaria minor—Mildenhall, H.G.A.C.

Orobanche elatior—Poulton, W.G.H.; Rabley Copse.

Orobanche minor—A yellow variety not uncommon in a field at Preshute.

Veronica scutellata—Bedwyn, P.T.

* *Veronica montana*—Copse on Martinsell; Axford and West Woods.

* *Thymus chamædrys*—Binck-knoll, P.B.S.

* *Polygonum Fagopyrum*—Has occurred occasionally, but evidently the remains of some former crop. First noticed by F.M.D.

Alnus glutinosa—Ramsbury, in two or three places; Jockey Woods, Bedwyn.

Salix pentandra.—Ramsbury, E.M.

Habenaria viridis—Rabley Downs, W.G.H.; Forest Hill, D.W.

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Habenaria bifolia—West Woods.
Lemna trisulca—Marsh at Chilton Foliat.
* *Eriophorum polystachion*—Marsh at Chilton Foliat.
* *Carex flava*—Marsh at Chilton Foliat.
* *Carex vulgaris*—Marsh at Chilton Foliat.
Carex remota—Jockey Woods, Bedwyn.
* *Triodia decumbens*—Savernake Forest.
Aira caryophyllea—West Woods.
Aira flexuosa—West Woods, Bedwyn.
Catabrosa aquatica—Mildenhall, G.H.A.C.
Blechnum boreale—Jockey Woods, Bedwyn; F.E.T.

* New species.

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ORNITHOLOGICAL NOTICES.

THE following notes, meagre though they are, are published to show that, though we are without a Head of the Ornithological Section, Birds are still observed. The Table is intended to indicate the duration of oviposition. It has been the custom of those who have observed any nests to report the same, with the number of eggs in each, as soon as possible after their return from their walk; but it must be observed that in very few cases are the eggs taken. Hence (1) the same nest may be reported by two different observers; and (2) a nest may be wrongly reported. In the first case, it has been deemed far better to run this chance of error, than to encourage the distruction of the nest, and (2) the value of the record will depend upon the knowledge of the observer; in all doubtful cases, additional enquires have been instituted, and it is hoped, that but a few errors of this kind exist. A third remark must be made: when a bird has been deprived of its nest, it frequently commences a fresh one, and this may go on for some time, so that some, possibly many, of the later notices may be those of birds who have been more than once robbed of their nests.

In this table, the number of eggs observed in each nest is recorded, unless a large number of nests have been seen. In this case, this sign ∞ has been used. If the eggs were "hard set," h.s. is put over the number. If young have been observed Y alone (without any number) is put down, and if the young are able to fly *Y. fly* is used. The other abbreviations are, H. *heard*, S. *seen*, B. *building*, N. *nest without eggs*; when a nest of any species, with more than one egg has been observed for the first time, the line is carried back a corresponding number of days; thus in the case of the Sparrow Hawk, six eggs were observed in the same nest on April 24th, the figure 6 is therefore placed under the date (April 24th), but the line carried back to the 18th, as being the probable date of the first egg.

Names of those whose Initials occur in the List, or who have aided in perfecting the Tables:—

R.H.A.	R. H. Alexander.	J.H.B.	J. H. Browning.
J.A.	J. Arnold.	C.M.B.	C. M. Bull, Esq.
T.G B.	T. G. Balfour.	G.T.P.C. ...	G. T. P. Cambridge.
K.C.B.	K. C. Bellhouse.	C.	Cathcart.
C.S.B.	C. S. Bengough.	C.E.C.	C. E. de Coetlogon.

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R.D. ... ... R. Denman.
D. ... ... — Dowding, Esq.
F.M.D. ... ... F. M. Drysdale.
F.H.H.E. ... F. H. H. East.
W.E. ... ... W. Elworthy.
R.A.F. ... ... R. A. Farrar.
J.A.F. ... ... J. A. Fellowes.
S.E.V.F. ... S. E. V. Filleul.
A.W.F. ... ... A. W. Flux.
R.N.F. ... ... R. N. Forster.
F.P.F. ... ... F. P. Froom.
W.M.G. ... ... W. M. Grove.
V.H. ... ... V. Harke.
H.B.H. ... ... H. B. Horner, Esq.
W.G.H. ... ... W. G. Hughes.
E H. ... ... E. Hunter.
H.G.K. ... ... H. G. Keary.
G.C A.K. ... G. C. A. Kentish.
O.F.J. ... ... O. F. Jacson.
G.L.L. ... ... G. L. Laird.
A.L. ... ... A. Longman.
H.P.L. ... ... H. P. Lucas.

N.M. ... ... N. Manders.
G.C.M. ... ... G. C. Mansel.
E.C.M. ... ... E. C. Marshall.
E.P.M. ... ... E. P. Martin.
E.M. ... ... E. Meyrick.
W.M.H.M. ... W. M. H. Milner.
K.W.M. ... ... K. W. Murray.
A.T.M. ... ... A. T. Murray.
L.F.P. ... ... L. F. Paul.
J.H.S. ... ... J. H. Sanderson.
J.E.S. ... ... J. E. Square.
G.L.S. ... ... G. L. Steele.
W.M.S. ... ... W. M. Sweet.
H.W.T. ... ... H. W. Thatcher.
P.T. ... ... P. Thicknesse.
T., or S.F.T. ... S. F. Townsend
A.E.T. ... ... A. E. Townsend.
W, or W.H.W. W. H. Williams.
A.F.W. ... ... A. F. Willoughby.
D.W. ... ... D. Womersley.
C.E.V. ... ... C. E. Vaughan.

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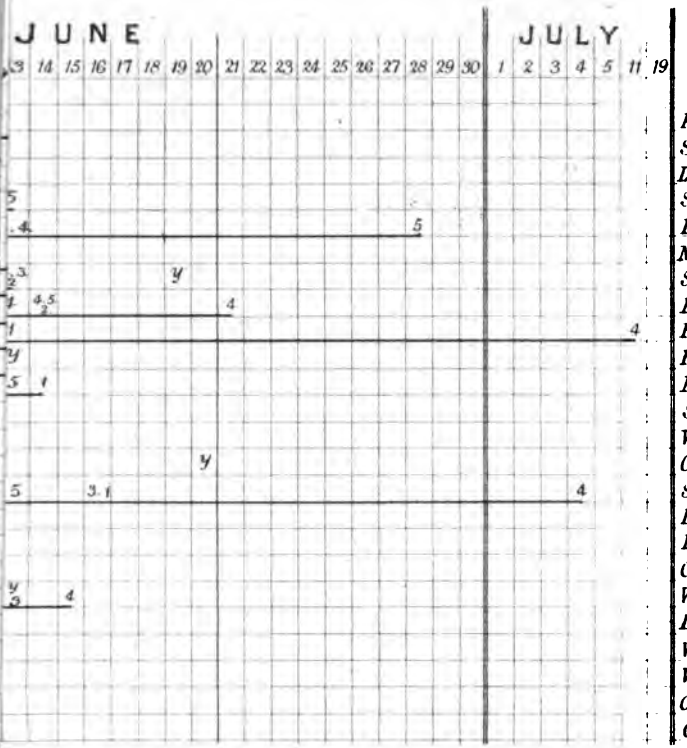

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JANUARY.

13.—Small Spotted Woodpecker captured. *Mr. Chandler.*

25.—Rooks congregating.

26.—Robin and Wren singing. S. F. T.

About this time large flocks of Lapwings were frequently seen flying over the town. *Mr. Coleman.*

FEBRUARY.

Scaup Pochard, shot in Pewsey Water Meadows, at the beginning of the month by Mr. C. Goode. It was a fine specimen, and in very good plumage. *S. B. Dixon, Esq.*

During the first week in February, large numbers of Brambling Finches arrived all round the town. In St. Margaret's as many as 35 were secured at a single shot. *Mr Coleman.*

3.—Hawfinch picked up, dead, in the Forest.

8.—Small flocks of a species of Dottrell, seen on Lye Bush Hills, known as Avebury and Monkton Downs, by Mr. Brown, Keeper. In the winters of 1843 and 1844, large flocks of the Dottrells and Golden Plovers were common on the Aldbourne Downs; from cultivation or some other cause they have nearly all disappeared. *Mr. W. Coleman.*

11.—Song Thrush and Chaffinch singing, A. E. T.

Few Rooks in the the Wilderness; no nest commenced.

24.—Black Scoter caught in the town; a second one seen at the same time.

28.—Rooks building, S. F. T. and W. H. W.

MARCH.

1.—One Rook's nest advanced.

2.— Jackdaws building, A. E. T.

3.—Missel Thrush building, T. and W. Rooks lining nest, T. and W.

10.—Robin's nest and eggs said to have been found; reported by T. and W. No eggs were found by any Member of the School till April 4th.

17.—Rook's eggs (2), taken at Manton, by S. E. V. F. "Some nests probably had more."

18.—Mountain Finch picked up, dead, by R. D.

Long-eared Owl's eggs (2), taken at Rockley, S. E. V. F.

Song Thrush's nest ready, T. and W.

22.—Peewit's "scratches" plentiful, T. and W.

24.—Blackbirds building, T. and W.

27.—Peewit's eggs (4) taken by T. and W. Jackdaws building, T. and W.

29.—Missel Thrush's egg (1), A E. T. and S. F. T., and (2) by T. and W.

Blackbird's eggs (2), seen in the town by A. E. T.

30.—Wren and Greenfinch building, A. E. T. and P. T.

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Song Thrush's egg (1), J. H. B. and G. C. A. K.

Chiff-chaff heard, S. E. V. F.

31.—Blackbird's egg (1), J. H. B. and H. G.K., and (1) by J.H.S. and G.L.L.

Hedge Accentor's eggs (4), H. T. L.

APRIL.

During April the School was away for the holidays, consequently but few notices have been recorded, except by S. F. T and A. E. T., who were staying, towards the latter end of the month, in the neighbourhood.

24.—Land Rail heard.

29.—Land Rail heard by C. M. B.

30.—Jackdaw's eggs (4), T. and W.

Starling's eggs (5), T. and W., and (1), W. M. G.

Long-tailed Tit's egg (1), W. M. G.

Wryneck heard, W. M. G.

MAY.

1.—Little Grebe's eggs (4), S. E. V. F.

3.—Goldcrest's eggs (8), T. and W., and W. M. S.

Jay's eggs (2), W. M. G.

Nuthatch's eggs (2), W. M. G.

Pheasant's eggs (6), T. and W., and W. M. S.

4.—Wren's eggs (4), T. and W., and W. M. S.

Greater Tit's eggs (2), W. M. G.

Snipe seen at Mildenhall, by A. E. T.

5.—Grasshopper Warbler heard by W. M. G.

6.—Missel Thrush, young about one week old, W. M. G.

Skylark's eggs (3), C. S. B.

Ringdove, young, ready to fly, A. E. T., E. P. M., and W. G. H.

7.—Nightingale heard, by C. E. V.

8.—Swift seen by T. and W.

Redstart's eggs (3), G. T. P. C.

Stock Dove's eggs (2), W. M. G.

Yellow Bunting's eggs (2), A. W. F. and A. L.

Sparrow Hawk's eggs (5), A. E. T.

Nightingale heard, by H. B. H.

9.—Pheasant's eggs (5); and Partridge's (5), in same nest, T. and W.

10.—Grasshopper Warbler heard, by T. and W.

Blue Tit's eggs (2), W. M G.

11.—Linnet's eggs (2), T. and A. E. T.

12.—House Sparrow's eggs (five nests, with 3 or 4 eggs in each), A. E. T. and V. H.

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15.—Bullfinch, building, T. and W. Blackbird's nests very commonly on the ground, T. and W.

Cole Tit's eggs (2), T. and W.

17.—Blackcap's eggs (4), A. E. T., E. H., and L. F. P.; and (4) W. M., H. M.; and young, T. and W. and G. C. M.

Chiff-chaff's eggs (6), T. and W., and G. C. M.

Whitethroat's egg (1), O. F. J.

Blackheaded Bunting's eggs (5), F. H. H. E. and A. F. W.

Creeper's eggs (6) and young, T. and W. and G. C. M.

Kingfisher's eggs (7), A. E. T., E. H., and L. F. P.

Wild Duck's eggs (9) and young, A. E. T., E. H., and L. F. P.

Lesser Spotted Woodpecker, young, A. E. T., E. H., and L. F. P.

18.—Lesser Whitethroat's egg (1), W. M. G.

Yellow Wagtail seen, W. M. G.

20.—Sedge Warbler's eggs (3), W. M. G.

22.—Swallow building, A. E. T. and C. S. B.

23.—Green Woodpecker's, (3 hard set), W. M. G.

24.—Swallow's eggs, (2), J. A.

Wheatear, young, S. E. V. F.

25.—Stonechat, seen, T. and W.

27.—Bullfinch's egg (1), E. C. M.

Cuckoo's egg in Redbreast's nest, L. P. T.

28.—Cuckoo's egg in Greenfinch's nest, T. and W., and W. M. S.

Red-backed Shrike seen, A. E. T. and F. M. D.

29.—Spotted Flycatcher's eggs (2), A. E. T. and E. C. M.

30.—Goldfinch's egg (1), A. E. T.

JUNE.

1.—Reed Warbler's eggs (5), T. and W., and (2), A. E. T.

Willow Warbler's eggs (4), T. and W.

Stonechat, young, W. M. G.

3.—Red-backed Shrike's eggs (2), T. and W.

5.—Pied Flycatcher's eggs (5), A. E. T.

6.—Bunting's eggs (6), T. and W.

7.—Meadow Pipit's eggs (5), T. and W.

Swift's egg (1), W. M. G., and E. P. M.

Turtle Dove's eggs (2), W. M. G.

8.—Wryneck's eggs (4), T. and W.

12.—Wood Warbler's eggs (2), T. and W.

14.—Martin's eggs (2, 4), T. and W.

19.—Landrail's eggs (2), D. W.

20.—Grasshopper Warbler, young, A. E. T.

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DONATIONS, &c., TO THE MUSEUM.

Archæology.—

Egyptian god; marble from the Catacombs of Rome; Specimen of rock, from the Apis Pits in Egypt; Fragment of the Great Sphinx and of Pompey's Pillar; of the Pavement near St. Stephen's Gate, at Jerusalem; Stones from the Prison of St. Peter at Rome; Smooth Stones from the Brook Elah; Rosary from the Mount of Olives; Chips from the Walls of Jerusalem; Coins from the Pyramids, and other curiosities ...	J. E. Pierson.
Coins from the Palace of the Cæsars at Rome	F. G. Eyres.
Collection of Coins by Miss Preston, Miss E. Preston, R. S. Mansel, Esq., C. Colville, F. Storr, Esq., C. F. P. Froom, G. W. W. Saville, — Twopeny, Mr. Tarrant, Rev. C. E. Thorpe, G. C. Mansel, O. F. Jacson, A. Fountain.	
Set of the current Coins of India, & other Coins	C. E. G. Crawford, Esq.
Phylacteries and Medal to commemorate the Murder of the Duc de Berry... ...	Rev. Dr. Farrar, F.R.S.
Specimen of Pavement from Spain ...	W. E. Koch, Esq.
Five Coins dug up in the College grounds...	Mr. Heward.

Botany.—

Specimen of (*Hierochuntina Anastatica*), the Rose of Jericho	J. E. Pierson.
Collection of Plants from the Botanical garden.	Rev. Canon How.
Roots of *Fritillaria*	W. Goodchild, Esq.
Plants for the Botanical garden	C. H. M. Thring.
Collection of Alpine Plants	Rev. Dr. Farrar, F.R.S.
Specimens of Safflower, Orchella Weed and Lac Dye	C. W. Houghton, Esq.
Skeletonised leaves from India	F. C. P. Froom.

Entomology.—

Specimen of *Deilephila Livornica*, taken at Marlborough	A. C. Hilton, Esq.

Geology.—

Lava from Vesuvius; Limestone from Pales-

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tine; Asphalt from the Dead Sea; Sand from the Great Desert	J. E. Pierson.
Incrustation of Carbonate of Lime from Worcestershire	A. F. W. Ingram.
Specimen of *Pecten* from the Railway Cutting near Shepton Mallet ...	A. Jackson.
A fine series of Specimens of Rocks from Aden, collected by Major Ducat, R.E.	per Rev. G. W. de Lisle.
Specimen of *Encrinite*	Rev. Dr. Farrar, F.R.S.
Ornithology.—	
Specimen of Velvet Scoter	J. H. Garland.
Five cases of Skeletons of Birds, &c ...	E. F. im. Thurn, Esq.
Zoology.—	
Shells from Jaffa, and from the Sea of Galilee, Scarabæus, and bones of lizard, &c, from the Tombs of Egypt, &c. ...	J. E. Pierson.
Two Cobras, two Iguanas, and a Carpet Snake from Aden	W. O'N. Lindesay.
Monstrosities of Lamb and of Kitten, and specimen of Game Cock	Mr. Rowe.
Saw of Saw-fish (*Pristis antiquorum*)... ...	Rev. Dr. Farrar, F.R.S.
Collection of Shells	W. E. Koch, Esq.
Library.—	
Report of the Birmingham School Natural History Society	by the Society.
Report of the Wellington College Natural History Society	ditto
Report of the Rugby School Natural History Society	ditto
Notes on Natural Philosophy	by the Author.
Natural History by Romer	C. F. P. Froom.
Two Books on Natural History	D. E. Leighton, Esq.
Knagg's "Lepidopterist's Guide"	T. G. Balfour
Miscellaneous.—	
Bottles of water from the Jordan and Dead Sea	J. E. Pierson.
Ribbon of honour, &c., from Germany ...	C. W. Houghton, Esq.
Specimen of Sèvres china from Palace of St. Cloud, destroyed in the Revolution of 1848	Rev. Dr. Farrar, F.R.S.
Specimen of Olive from the Mount of Olives	G. W. W. Savile.

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ACCOUNTS.

RECEIPTS.	£	s.	d.	EXPENDITURE.	£.	s.	d.
Balance in hand	43	17	0	Garden Expenses	20	14	6
Subscriptions, Hon. Mem.	4	7	0	Museum „	28	18	7
„ Members—				Library „	6	14	9
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The unusually heavy expenses in connection with the Garden and Museum, but which are not likely to occur again, as well as the publication of another Edition of the "Antiquities of Marlborough," will fully account for the very small balance in hand.

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THE following Tables were commenced two years ago, but when considerable progress had been made with them, it was found impossible to finish them in time for publication in the Report; and it is only after considerable trouble that they have been completed for publication now, some portion of the work done two years ago having to be done over again in order to make the averages up to date. Every care has been taken to make them correct, but it is hoped that in consideration of the numerous figures which have to be checked (and that in the pressure of other work) excuse will be made for any errors which may hereafter be discovered. Perhaps I may be pardoned in saying that some idea of the trouble involved may be gathered from the fact that each one of the Tables involves calculations requiring over 150,000 figures, the whole 124 Tables, therefore, requiring nearly *twenty million* figures.

The Tables themselves will not have much *general* interest, but to those who take the trouble to examine them various interesting facts may be gathered. In selecting the different species, I have endeavoured to embrace as many natural orders as possible, and to take in those orders the commonest and earliest flowering species. But this has not always been possible. We did not assemble at Marlborough till the middle of February, and hence it was very difficult to get the proper date of first flowering of some of the earlier species. It will be seen, however, from the details now given, how very variable our climate is and what great differences there are in the date of first flowering of the same species in different years.

The *duration of flowering* has only been studied for 5 years; and even then some species had not done flowering when we left in June. In the tables, where a date is given at the end of the line, it indicates that the plant had done flowering then, but if no date occurs, that the plant was in flower up to the date indicated by the length of the line, but that it was over by the time we were able to observe it again after the holidays.

Some of the dates of first flowering, especially in 1865, seem unusually late. In 1865 we *began* our observations, and hence it is possible we may have omitted to record a date at the right time, but in the case of those given I have every reason to suppose that they were correct. For dates in subsequent years, I have in most cases records that the plant was only in bud up to the actual date given.

I have been anxious to publish these tables now, as two circumstances have occurred which *may* make any further records very incomplete. The first is the fact of our having three terms instead of two half-years. Our Easter

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holidays will then occur at a time when many plants are coming into flower. This year was a very backward one, and no great difficulty was experienced, but this is not likely to happen often, and second, my removal from the College to a house in the town, will possibly prevent my receiving as many plants as formerly, and thus many "first notices" may be lost. It is quite possible that a different set of plants may be taken for observation, but very improbable that the same set can be observed as accurately as before. For this reason I have been unable to make such general observations and work out any results as I had intended. Perhaps the Tables may serve for separate papers to be read at our meetings on future occasions.

When a ? occurs before any date, it indicates that there is a slight doubt about the actual date, and in general corresponds to the word "by" in the usual Botanical Report; but no dates have been inserted about which any reasonable doubt can exist.

The full details of the Weather, as well as the Diagrams illustrating them are unavoidably postponed till the Christmas Report.

NOTES.

Anemone nemorosa.—In 1867, specimens observed on February 20th and 23rd. The date for 1865 seems very late, it was the first year of systematic observation, and hence there *may* have been earlier specimens, though I am so far certain that such was not the case, that I have allowed the date to stand. Omitting this, the average date of flowering would be March 9th, and the difference between earliest and latest flowering only 22 days.

2.—*Ranunculus pseudo-fluitans.*—Generally flowers earlier at Lockeridge.

4.—*Ranunculus auricomus.*—In 1869, specimens seen on March 8th, and in 1872 on March 6th.

5.—*Ranunculus bulbosus.*—In 1873, specimen seen on Jan. 26th. In 1871 and 1872 solitary specimens were in flower in Aug., Sep., Oct., Nov., and Dec.

6.—*Ranunculus arvensis.*—In 1873 cultivated specimens were in flower on May 16th; wild ones were not observed till the 22nd May. The plant was unusually scarce this year.

7.—*Caltha palustris.*—In 1865 the flowering seems very late. The mean temperature of the previous six weeks was below the average. In 1872 the flowering was very early, but the temperature was very high. The next recorded date of flowers observed in that year was March 3rd.

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10.—*Fumaria officinalis.*—In 1869 the winter and spring were very mild, consequently specimens were observed during the whole year.

12.—*Barbarea vulgaris.*—In 1871 a single specimen observed in flower on Ap. 17th, and in 1872 one on Ap. 12.

14.—*Sisymbrium officinale.*—In 1869 specimens observed in flower on Ap. 13th and May 1st; and in 1872 on Ap. 11 and 12.

15.—*Alliaria officinalis.*—In 1865 the plant was barely in flower on Ap. 25th. In 1871 and 1872 specimens were still in flower in Sep., Oct., and Nov.

16.—*Draba verna.*—In 1866 and 1868 the plant may have been in flower a little earlier.

17.—*Helianthemum vulgare.*—In 1872 a single specimen observed on May 5th.

18.—*Viola odorata.*—In 1872 cultivated specimens were in flower on Jan. 17.

23.—*Stellaria Holostea.*—In 1869 a specimen observed on Feb. 27th.

24.—*Malva sylvestris.*—In 1873 specimens were still in flower on March 11th and 12th.

27.—*Geranium pratense.*—In 1872 one specimen in flower on May 24th.

28.—*Geranium molle.*—Remarkably early in 1872.

30.—*Geranium Robertianum.*—In 1872 a specimen in flower on March 23rd. The difference between the dates of first flowering is only 7 days.

46.—*Potentilla Fragariastrum.*—In 1872 cultivated specimens were in flower on Feb. 14th.

48.—*Geum urbanum.*—In 1868 cultivated specimens in flower on Ap. 12. In 1869 the plant lasted throughout the winter.

52.—*Ribes sanguineum.*—In 1869 some specimens were nearly in flower on Jan. 28.

53.—*Saxifraga granulata.*—In 1865 specimens were in flower on Ap. 20 at Overton.

57.—*Anthriscus sylvestris.*—Extra early specimens are not uncommon—*e.g.* Mch. 11, 1868. Feb. 14, 24, 1869. Mch. 3, 1872. Jan. 26, Mch. 2, 9, 10, 1873.

62.—*Sherardia arvensis.*—In 1872 specimens found on Feb. 7.

71.—*Carduus crispus.*—One specimen May 12, 1872.—In flower May 17, 1873, at Chilton Foliat.

72.—*Carduus palustris.*—One specimen May 6, 1873.

75.—*Crepis virens.*—Specimens in flower Ap. 24, 1868, and Ap. 30, 1872.

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76.—*Hieracium pilosella.*—Specimens in flower Ap. 22, 1870.

78.—*Convolvulus arvensis.*—Not observed up to June 25, 1867, probably not in flower.

79.—*Cynoglossum officinale.*—In 1872 a specimen lasted till Sep. 17.

85.—*Rhinanthus Crista-galli.*—Specimens in flower Aug. 31, 1869.

87.—*Veronica Chamædrys.*—Specimens found Mch. 31st, 1867, and Ap. 1st, 1868.

88.—*Nepeta Glechoma.*—Specimen found Sep. 29th, 1871.

93.—*Primula veris.*—Specimens found Feb. 27th, and Sep. 9th, 1869; Sep. 9th, 1871; and March 8th, 1872.

94.—*Plantago lanceolata.*—Specimen in flower Mch. 31st, 1872.

97.—*Rumex Acetosella.*—Specimens in flower Aug. 2nd, and Oct. 1st, 1871; and on Mch. 31st, 1872.

101.—*Corylus Avellana.*—The fertile flowers were possibly earlier in 1870 and 1873.

111.—*Endymion nutans.*—In 1866 one specimen in flower on Mch. 30th, but the flowers were not in perfection till the end of April.

112.—*Luzula campestris.*—Very early in 1872: specimens gathered on Mch. 12, 24, and 31.

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1. Anemone nemorosa. *Wood Anemone.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Mch	Mch	Mch	Feb	Mch	Mch	Feb	Mch
First flower	**6**	**18**	**11**	**2**	**27**	**20**	**12**	**29**	**9**
Mean Temperature of previous 6 weeks	37·3	37·0	41·1	40·8	42·4	36·0	42·1	42·9	35·4
Mean daily Rainfall of ditto	0·04	0·09	0·09	0·10	0·10	0·06	0·06	0.18	0.07
No. of Rainy days in ditto...	19	25	30	19	24	19	23	33	21

Average date for 9 years... ... ... Mch 12
Mean Temp. of previous 6 wks. for 9 yrs. 39·7
Mean daily Rainfall ditto ditto 0·08 in.
Mean no. of Rainy days ditto ditto 25

Earliest flowering...Feb.27/69
Latest flowering ...Ap.6/65
Difference ... ...39 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+25**	**+6**	**—1**	**—10**	**—14**	**+8**	**a**	**—13**	**—3**
Mean Temp. ...	—2·4	—2·7	+1·4	+1·1	+2·7	—3·7	+2·4	+3·2	—4·3
Mean dy. Rainfall	—0·04	+0·01	+0·01	+0·02	+0·02	—0·02	—0·02	+0·05	—0·01
No. of Rainy days	—6	a	+5	—6	—1	—6	—2	+8	—4

Duration of flowering.

	Feb.	Mar.	April.	May	June.
1869	27	.....	.....	22	
1870		20.....	.....	28	
1871		12.....	.....	12	
1872	29	.....	.....	24	
1873		9	.....	31	

2. Ranunculus pseudo-fluitans. *Water Fennel.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Ap	Ap	Ap	Ap	Mch	Mch	Ap
First flower	**16**	**18**	**19**	**14**	**13**	**17**	**31**	**19**	**20**
Mean Temperature of previous 6 weeks	39·9	42·4	40·8	41·9	39·9	40·2	43·6	44·5	42·5
Mean daily Rainfall of ditto	0·02	0·08	0·12	0·04	0 04	0·08	0 04	0·06	0·06
No. of Rainy days in ditto...	13	27	29	17	18	9	13	23	21

Average date for 9 years ... ... Ap. 11
Mean Temp. of previous 6 wks. for 9 yrs. 40·6
Mean daily Rainfall ditto ditto 0·06 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...Mch.19/72
Latest flowering ...Ap.20/73
Difference ... ...33 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+5**	**+7**	**+8**	**+3**	**+2**	**+6**	**—12**	**—24**	**+9**
Mean Temp.....	—0·7	+1·8	+0·2	+1·3	—0·7	—0·4	+3·0	+3·9	+1·9
Mean dy. Rainfall	—0·04	+0·02	+0·06	—0·02	—0·02	—0·03	a	—0·02	a
No. of Rainy days	—6	+8	+10	—2	—1	—10	—6	+4	+2

Duration of flowering.

	Mar.	April.	May.	June.	July.	Aug.	Sept.
1869		13.....	.....	.....	.....	.....	...7
1870		17.....	.....	.....	...7		
1871	31	.....	.....	25			
1872	19.....	.....	.....	.....	.....	23	
1873		20...	.....	.....	.....		

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3. Ranunculus ficaria. *Pilewort.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Mch	Feb	Feb	Feb	Jan	Mch	Feb	Feb	Feb
First flower	**6**	**10**	**9**	**15**	**30**	**1**	**23**	**10**	**17**
Mean Temperature of previous 6 weeks	34·6	42·2	35·1	39·0	41·2	34·0	37·2	41·2	37·4
Mean daily Rainfall of ditto	0·11	0·17	0·13	0·15	0·14	0·08	0·07	0·19	0 08
No. of Rainy days in ditto...	28	34	27	19	25	15	25	35	22

Average date for 9 years ... ... Feb. 16
Mean Temp. of previous 6 wks. for 9 yrs. 38·4
Mean daily Rainfall ditto ditto 0·12 in.
Mean no. of Rainy days ditto ditto 25

Earliest flowering...Jan. 30/69
Latest flowering ...Mar. 6/65
Difference ... ...36 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+18**	**—6**	**—7**	**—1**	**—18**	**+13**	**+7**	**—6**	**+1**
Mean Temp.....	—3·8	+3·8	—3·3	+0·6	+2·8	—4·4	—1·2	+2·8	—1·0
Mean dy. Rainfall	—0·01	+0·05	+0·01	+0·03	+0 02	—0·04	—0·05	+0·07	—0·04
No. of Rainy days	+3	+9	+2	—6	a	—10	a	+10	—3

Duration of flowering.

	Jan.	Feb.	Mar.	April.	May.	June.
1869	30	.....	.....	.....	27	
1870			1	.....	.....	2
1871		28...	.....	.....	26	
1872		10.....	.....	.....	24	
1873		17.....	.....	.....	.....	...8

4. Ranunculus auricomus. *Goldilocks.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	? Ap	Ap	Ap	Mch	Mch	Ap	Mch	Mch	Ap
First flower	**19**	**16**	**19**	**29**	**25**	**10**	**30**	**20**	**11**
Mean Temperature of previous 6 weeks	41·2	41·7	40·8	42·5	38·8	39·3	43·6	44·3	41·1
Mean daily Rainfall of ditto	0·04	0·09	0·12	0·08	0·06	0·06	0·04	0·05	0·08
No. of Rainy days in ditto...	16	28	29	25	22	15	13	22	25

Average date for 9 years ... ... Ap. 6.
Mean Temp. of previous 6 wks. for 9 yrs. 40·0
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 21

Earliest flowering...Mar. 20/72
Latest flowering...Ap. 19/65-7
Difference ... ...31 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+13**	**+10**	**+13**	**—9**	**—13**	**+4**	**—8**	**—18**	**+5**
Mean Temp.....	+1·2	+1·7	+0·8	+2·5	—1·2	—0·7	+3·6	+4·3	+1·1
Mean dy. Rainfall	—0·03	+0·02	+0·05	+0·01	—0·01	—0·01	—0·03	—0·02	+0·01
No. of Rainy days	—5	+7	+8	+4	+1	—6	—8	+1	+4

Duration of flowering.

	Feb.	Mar.	April.	May.	June.
1869		25...	.....	22	
1870			10.....	24	
1871		30	.....	26	
1872		20.....	.....	.....	1
1873			11.....	.....	2

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5. Ranunculus bulbosus. *Buttercup.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	Ap **24**	Ap **17**	Ap **17**	Ap **9**	Mch **30**	Ap **7**	Ap **8**	Ap **3**	Ap **11**
Mean Temperature of previous 6 weeks	43·4	42·1	39·9	42·6	37·9	38·9	43·6	43·5	41·1
Mean daily Rainfall of ditto	0·04	0·08	0·12	0·07	0·05	0·05	0·04	0·09	0·08
No. of Rainy days in ditto	13	27	29	22	23	15	13	22	25

Average date for 9 years... ... ... Ap. 10
Mean Temp. of previous 6 wks. for 9 yrs. 40·4
Mean daily Rainfall ditto ditto 0·06 in.
Mean no. of Rainy days ditto ditto 20

Earliest flowering...Mch.30/69
Latest flowering ...Ap. 24/65
Difference ... ...26 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+14**	**+7**	**+7**	**—1**	**—12**	**—3**	**—2**	**—7**	**+1**
Mean Temp.....	+3·0	+1·7	—0·5	+2·2	—2·5	—1·5	+3·2	+3·1	+0·7
Mean dy. Rainfall	—0·02	+0·02	+0·06	+0·01	—0·01	—0·01	—0·02	+0 03	+0 08
No. of Rainy days	—7	+7	+9	+2	+3	—5	—7	+2	+5

Duration of flowering.

	Mar.	April.	May.	June.	July.
1869	30	.....	.....	2	
1870		7.....	.....	...7	
1871		8.....	.....	1	
1872		8.....	.....	16	
1873		11.....	.....	.....	...10

6. Ranunculus arvensis. *Corn Crowfoot.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	May **17**	May **23**	?Jun **8**	May **15**	May **1**	May **20**	May **9**	May **5**	May **16**
Mean Temperature of previous 6 weeks	51·2	47·4	50·7	47·8	45·3	47·5	46·6	45·7	45·2
Mean daily Rainfall of ditto	0·07	0·06	0·09	0·07	0·04	0·06	0·09	0·09	0·05
No. of Rainy days in ditto...	20	18	20	16	16	9	18	20	18

Average date for 9 years... ... ... May 16
Mean Temp. of previous 6 wks. for 9 yrs. 47·5
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...May 1/69
Latest flowering ...June 8/67
Difference ... ...38 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+1**	**+7**	**+23**	**—1**	**—15**	**+4**	**—7**	**—11**	**a**
Mean Temp.....	+3·7	—0·1	+3·2	+0·3	—2·2	a	—0·9	—1·8	—2·3
Mean dy. Rainfall	a	—0·01	+0·02	a	—0·03	—0·01	+0·02	+0·02	—0·02
No. of Rainy days	+1	—1	+1	—3	—3	—10	—1	+1	—1

Duration of flowering.

	April.	May.	June.	July.	Aug.
1869		1.....	2		
1870		20.....	.....	4	
1871		9.....26			
1872		5.....	13		
1873		16.....	.....	17	

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7. Caltha palustris. *Marsh Marigold.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Mch	Feb	Mch	Mch	Mch	Ap	Feb	Feb
First flower	**13**	**21**	**27**	**23**	**5**	**20**	**1**	**14**	**27**
Mean Temperature of preivous 6 weeks	39·1	36·4	41·7	42 6	42·5	36·0	43 6	41·7	34·3
Mean daily Rainfall of ditto	0 03	0 09	0·10	0·07	0·11	0 06	0 04	0·17	0 07
No. of Rainy days in ditto	13	23	30	26	28	19	13	35	19

Average date for 9 years ... ... Mch 14
Mean Temp. of previous 6 weeks for 9 yrs. 39 5
Mean daily Rainfall ditto ditto 0·08 in.
Mean No. of Rainy days ditto ditto 25

Earliest flowering...Feb.14/72
Latest flowering ...Ap.13/65
Difference ... ...59 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+30**	**+7**	**—16**	**+9**	**—9**	**+6**	**+18**	**—29**	**—16**
Mean Temp.....	—0·4	—3·1	+2·2	+3·1	+3·0	—3·5	+4·1	+2·2	—5·2
Mean dy. Rainfall	—0·05	a	+0·02	—0·01	+0·03	—0·02	—0·04	+0·09	—0·01
No. of Rainy days	—12	—2	+5	+1	+3	—6	—12	+10	—6

Duration of flowering.

	Feb.	Mar.	April.	May.	June.	July.
1869		5.....	.....	29		
1870		20...	.....	.....	13	
1871			1.....	.....	1	
1872	14.....	.....	.....	.....	15	
1873	27	.....	.....	.....	.....	...10

8. Papaver Rhœas. *Common Red Poppy.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Jun	May	Jun	May	May	Jun	May	May	Jun
First flower	**3**	**30**	**16**	**19**	**12**	**5**	**26**	**28**	**13**
Mean Temperature of previous 6 weeks	52·6	47·6	51·7	49 0	48·5	50·1	48 8	46·2	49·6
Mean daily Rainfall of ditto	0·08	0·06	0·09	0·08	0·09	0·06	0·09	0·09	0·06
No. of Rainy days in ditto...	21	15	23	16	20	11	17	27	20

Average date for 9 years ... . May 31
Mean Temp. of previous 6 weeks for 9 yrs. 49·3
Mean daily Rainfall ditto ditto 0·07 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering...May12/69
Latest flowering ...Jun.16/67
Difference ... ...35 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+3**	**—1**	**+16**	**—12**	**—19**	**+5**	**—5**	**—3**	**+13**
Mean Temp. ...	+3·3	—1·7	+2·4	—0·3	—0·8	+0·8	—0 5	—3·1	+0 3
Mean dy. Rainfall	+0·01	—0·01	+0·02	+0·01	+0·02	—0·01	+0·02	+0 02	—0·01
No. of Rainy days	+3	—3	+5	—2	+2	—7	—1	+9	+2

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	12.....	.....	.....	.....	.....	29		
1870		5.....	.....	.....	.....	.....	6	
1871	26...	.....	.....	.....	.....	.....	...18	
1872	28	.....	.....	.....	.....	.....	.....	1
1873		13.....	.....					

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9. Chelidonium majus. *Greater Celandine.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	May	May	Ap	Ap	Ap	Ap	Ap	Ap
First Flower...	**26**	**1**	**7**	**2**	**27**	**25**	**25**	**12**	**27**
Mean Temperature of previous 6 weeks	44·2	45·2	47·5	42·7	44·5	42·9	45·0	43·6	43·1
Mean daily Rainfall of ditto	0·04	0 09	0·07	0·07	0·06	0·02	0·08	0·06	0·04
No. of Rainy days in ditto	13	26	24	21	20	5	13	16	18

Average date for 9 years ... ... Ap. 24
Mean Temp. of previous 6 weeks for 9 yrs. 43·3
Mean daily Rainfall ditto ditto 0 07in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering...Ap. 2/68
Latest flowering ...May 7/67
Difference ... ...35 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+2**	**+7**	**+13**	**—22**	**+3**	**+1**	**+1**	**—12**	**+3**
Mean Temp.	+0·9	+1·9	+4·2	—0·6	+1·2	—0 4	+1·7	+0·3	—0 2
Mean dy. Rainfall	—0·03	+0·02	a	a	—0·01	—0·05	+0·01	—0·01	—0·03
No. of Rainy days	—5	+8	+6	+3	+2	—13	—5	—2	a

Duration of flowering.

	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.
1869	27	.....	.....	.....	31			
1870	25	.....	.....	.....	.....	.....	3	
1871	25	.....	.....	.....	.....	.....	.....	1
1872	12	.....	.....	.....	.....	...17		
1873	27	.....	.....	.....				

10. Fumaria officinalis. *Fumitory.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	May	May	Mch	Ap	Ap	Ap	Ap
First flower	**20**	**26**	**23**	**11**	**25**	**16**	**27**	**30**	**29**
Mean Temperature of previous 6 weeks	41·6	44·7	48·7	46·8	38 8	39·8	45·7	43 7	43·5
Mean daily Rainfall of ditto	0·04	0·08	0·09	0·07	0·06	0 03	0·07	0·09	0·04
No. of Rainy days in ditto	16	26	23	15	22	10	14	20	19

Average date for 9 years ... ... Apl. 24
Mean Temp. of previous 6 weeks for 9 yrs. 43·3
Mean daily Rainfall ditto ditto 0 07 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering...Mch25/69
Latest flowering ...May23/67
Difference ... ...59 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—4**	**+2**	**+29**	**+17**	**—30**	**—8**	**+3**	**+6**	**+5**
Mean Temp.	—1·7	+1·4	+5·4	+3·5	—4·5	—3·5	+2·4	+0·4	+0·2
Mean dy. Rainfall	—0·03	+0·01	+0·02	a	—0·01	—0·04	a	+0·02	—0·03
No. of Rainy days	—2	+8	+5	—3	+4	—8	—4	+2	+1

Duration of flowering.

	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	25	.....	.....	.....	.....	.....	.....	.....	30	
1870		16...	.....	.....	.....	.....	.....	30		
1871		27	.....	.....	.....	.....	.....	.....	2	
1872		30	.....	.....	.....	.....	.....	.....	.....	1
1873		29	.....	.....	.....					

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11. Nasturtium officinale. *Water-cress.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	?Jun	Jun	Jun	May	May	May	May	Jun	Jun
First flower	**1**	**6**	**5**	**27**	**21**	**28**	**26**	**13**	**8**
Mean Temperature of previous 6 weeks	52·6	49·2	50·2	51·9	49·3	49·0	48·8	48·0	48·9
Mean daily Rainfall of ditto	0·08	0·08	0·09	0·10	0·10	0·05	0·09	0·11	0·05
No. of Rainy days in ditto.	20	18	21	18	21	8	17	27	18

Average date for 9 years ... ... June 1
Mean Temp. of previous 6 weeks for 9 yrs. 49·4
Mean daily Rainfall ditto ditto 0·07 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering ..May21/69
Latest flowering ...Jun.13/72
Difference ... ...24 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	a	**+5**	**+4**	**—6**	**—12**	**—5**	**—7**	**+12**	**+7**
Mean Temp.....	+3·2	—0·2	+0·8	+2·5	—0·1	—0·4	—0·6	—1·4	—0·5
Mean dy. Rainfall	+0·01	+0·01	+0·02	+0·03	+0·03	—0·02	+0·02	+0·04	—0·02
No. of Rainy days	+12	a	+3	a	+3	—10	—1	+9	a

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1869	21.....	.....	.....	.....	.....	.....	2
1870	28	.....	.....	.....	.....	...8	
1871	... 26...	.....	.....	.....	.....	3	
1872		13.....	.....	.....	...17		
1873		8.....	.....				

12. Barbarea vulgaris. *Bitter Winter-cress.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	May	May	May	Ap	May	Ap	Ap	Ap
First flower	**30**	**16**	**10**	**1**	**20**	**12**	**30**	**26**	**30**
Mean Temperature of previous 6 weeks	45·8	46·1	48·6	44·4	41·6	45·3	46 3	43·3	43·6
Mean daily Rainfall of ditto	0·04	0·07	0·08	0·07	0·06	0·03	0·09	0·08	0·04
No. of Rainy days in ditto...	13	23	24	16	20	6	16	19	19

Average date for 9 years ... ... May 3
Mean Temp. of previous 6 weeks for 9 yrs. 45·3
Mean daily Rainfall ditto ditto 0·07in
Mean No. of Rainy days ditto ditto 18

Earliest flowering...Ap.20/69
Latest flowering ...May16/66
Difference ... ...26 days

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—3**	**+13**	**+7**	**—2**	**—13**	**+9**	**—3**	**—7**	**—3**
Mean Temp.....	+0·5	+0·8	+3·3	—0·9	—3·7	+a	+1·0	—2·0	—1·7
Mean dy. Rainfall	—0·03	+a	+0·01	+a	—0·01	—0·04	+0·02	+0·01	—0·03
No. of Rainy days	—5	+5	+6	—2	+2	—12	—2	+1	+1

Duration of flowering.

	Mar.	April.	May.	June.	July.
1869		20.....	27		
1870			12.....	.....	2
1871		30	27		
1872		26...	.....	21	
1873		30	.....	27	

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13. Cardamine pratensis. *Cuckoo-flower.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Ap	Mch	Mch	Ap	Ap	Mch	Ap
First flower	**20**	**22**	**18**	**31**	**25**	**14**	**1**	**12**	**11**
Mean Temperature of previous 6 weeks	41·6	43·4	40·3	42·6	38·8	39·2	43·6	44·6	41·1
Mean daily Rainfall of ditto	0·04	0·08	0·12	0·07	0 06	0·05	0·04	0·07	0·08
No. of Rainy days in ditto...	16	27	28	23	22	16	13	27	25

Average date for 9 years... ... ... Ap. 5
Mean Temp. of previous 6 wks. for 9 yrs. 39·9
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 21

Earliest flowering...Mch.12/72
Latest flowering ...Ap. 22/66
Difference ... ...42 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+15**	**+17**	**+13**	**—6**	**—12**	**—1**	**—4**	**—25**	**+6**
Mean Temp.....	+1·7	+3·5	+0·4	+2·7	—1·1	—0·7	+3·7	+4·7	+1·2
Mean dy. Rainfall	—0·03	+0·01	+0·05	a	—0·01	—0·02	—0·03	a	+0·01
No. of Rainy days	—5	+6	+7	+2	+1	—5	—8	+6	+4

Duration of flowering.

	Mar.	April.	May.	June.	July.
1869	25...	.....	.....	2	
1870		14.....	.....	20	
1871		1.....	.....	1	
1872	12.....	.....	.....	21	
1873		11.....	.....	.....	1

14. Sisymbrium officinale. *Common Hedge-mustard.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun	Jun	May	May	May	May	May	May
First flower	**4**	**10**	**18**	**15**	**21**	**12**	**12**	**9**	**2**
Mean Temperature of previous 6 weeks	47·5	50·0	51·3	47·8	49·3	45·3	46·9	46·3	44·4
Mean daily Rainfall of ditto	0·04	0·06	0·09	0·07	0·10	0·03	0·09	0·08	0·04
No. of Rainy days in ditto...	16	14	24	16	21	6	18	22	18

Average date for 9 years... ... ... May 18
Mean Temp. of previous 6 wks. for 9 yrs. 47·7
Mean daily Rainfall ditto ditto 0·08 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...May 2/73
Latest flowering ...Jun.18/67
Difference ... ...47 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—14**	**+23**	**+31**	**—3**	**+3**	**—6**	**—6**	**—9**	**—16**
Mean Temp.....	—0·2	+2·3	+3·6	+0·1	+1·6	—2·4	—0·8	—1·4	—3·3
Mean dy. Rainfall	—0·04	—0·02	+0·01	—0·01	+0·02	—0·05	+0·01	a	—0·04
No. of Rainy days	—3	—5	+5	—3	+2	—13	—1	+3	—1

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	21...	.....	.....	.....	.....	31		
1870	12.....	.....	.....	.....	.....	.....	20	
1871	12.....	.....	.....	.....	.....	.....	...12	
1872	9.....	.....	.....	.....	.....	.....	.....	...9
1873	2.....	.....	.....					

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15. Alliaria officinalis. *Garlic Hedge-mustard.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Ap	Ap	Ap	Ap	Ap	Ap	Ap
First flower	**25**	**23**	**23**	**14**	**12**	**21**	**14**	**6**	**25**
Mean Temperature of previous 6 weeks	43·7	43·5	42·1	41·9	39·5	41·5	44·0	43·3	43·0
Mean daily Rainfall of ditto	0·04	0·08	0·12	0·04	0·04	0·03	0·05	0·07	0·05
No. of Rainy days in ditto...	13	26	29	17	19	7	14	19	18

Average date for 9 years... ... ... Ap. 18
Mean Temp. of previous 6 wks. for 9 yrs. 41·9
Mean daily Rainfall ditto ditto 0·06 in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering...Ap. 6/72
Latest flowering Ap.25/65-73
Difference ... ...19 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+7**	**+5**	**+5**	**—4**	**—6**	**+3**	**—4**	**—12**	**+7**
Mean Temp.....	+1·8	+1·6	+0·2	a	—2·4	—0·4	+2·1	+1·4	+1·1
Mean dy. Rainfall	—0·02	+0·02	+0·06	—0·02	—0·02	—0·03	—0·01	+0·01	+0·01
No. of Rainy days	—6	+7	+10	—2	a	—12	—5	a	—1

Duration of flowering.

	April.	May.	June.	July.	Aug.
1869	12.....	.....	.....	.....	20
1870	21.....	.....	.....	2	
1871	14.....	.....	1		
1872	6.....	.....	16		
1873	25...	.....	19		

16. Draba verna. *Whitlow-grass.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Mch	Mch	Mch	Feb	Mch	Feb	Mch	Mch
First flower	**6**	**10**	**4**	**14**	**26**	**26**	**28**	**3**	**26**
Mean Temperature of previous 6 weeks	37·3	37·9	42·6	42·0	42·4	35·1	38·4	44·0	37·8
Mean daily rainfall of ditto	0·04	0·11	0·10	0·08	0·11	0·06	0·05	0·13	0·09
No. of Rainy days in ditto...	19	27	30	23	24	19	23	33	24

Average date for 9 years ... ... Mch 12
Mean Temp. of previous 6 weeks for 9 yrs. 39·6
Mean daily Rainfall ditto ditto 0·08 in.
Mean No. of Rainy days ditto ditto 25

Earliest flowering...Feb.26/69
Latest flowering ...Ap. 6/65
Difference ... ...40 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+25**	**—2**	**—8**	**+2**	**—15**	**+14**	**—15**	**—9**	**+14**
Mean Temp.....	—2·3	—1·7	+3·0	+2·4	+2·8	—4·5	—1·2	+4·4	—1·8
Mean dy. Rainfall	—0·04	+0·03	+0·02	a	+0·03	—0·02	—0·03	+0·05	+0·01
No. of Rainy days	—6	+2	+5	—2	—1	—6	—2	+8	—1

Duration of flowering.

	Feb.	March.	April.	May.	June.
1869	26...	.....	.....	27	
1870		26...	.....	.....	
1871	28	.....	.....	1	
1872	...	3.....	.....	.....	15
1873		26...	.....	.....	13

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17. Helianthemum vulgare. *Rock-rose.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	Jun	May	May	May	May	May	May
First flower	**19**	**22**	**3**	**9**	**?14**	**16**	**13**	**16**	**15**
Mean Temperature of previous 6 weeks	51·1	47·3	50·2	46·0	48·9	46·4	46·8	46·1	45·2
Mean daily Rainfall of ditto	0·07	0·07	0·09	0·07	0·09	0·08	0·09	0·08	0·05
No. of Rainy days in ditto...	21	19	21	14	19	9	18	23	19

Average date for 9 years... ... ... May 18
Mean Temp. of previous 6 wks. for 9 yrs. 47·7
Mean daily Rainfall ditte ditto 0·08 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...May 9/68
Latest flowering ...Jun.3/67
Difference ... ...25 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+1**	**+4**	**+16**	**—9**	**—4**	**—2**	**—5**	**—2**	**—3**
Mean Temp. ...	+3·4	—0·4	+2·5	—1·7	+1·2	—1·3	—0·9	—1·6	—2·5
Mean dy. Rainfall	—0·01	—0·01	+0·01	—0·01	+0·01	—0·02	+0·01	a	—0·03
No. of Rainy days	+2	a	+2	—5	a	—10	—1	+4	a

Duration of flowering.

	May	June	July	Aug.	Sept.	Oct.	Nov.
1869	14...	.....	.....	.....	.....	.....	...4
1870	16...	.....	.....	.....	.....	18	
1871	13...	.....	.....	.....	.....	.....	...5
1872	16...	.....	.....	.....	.....		
1873	15...	.....	.....				

18. Viola odorata. *Sweet Violet.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Meh	Feb	Feb	Mch	Feb	Mch	Mch	Feb	Mch
First flower	**23**	**28**	**23**	**1**	**16**	**18**	**4**	**21**	**18**
Mean Temperature of previous 6 weeks	34·7	40·2	39·9	40·7	43·1	36·2	39·2	42·2	36·6
Mean daily Rainfall of ditto	0·06	0·12	0·10	0·10	0·11	0·09	0·04	0·14	0·09
No. of Rainy days in ditto...	19	29	27	18	21	20	19	34	24

Average date for 9 years ... ... Meh 4
Mean Temp. of previous 6 wks. for 9 yrs. 39·1
Mean daily Rainfall ditto ditto 0·09 in.
Mean no. of Rainy days ditto ditto 24

Earliest flowering...Feb. 16/69
Latest flowering ...Mch.28/65
Difference ... ...36 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+19**	**—5**	**—10**	**—3**	**—17**	**+14**	**a**	**—13**	**+14**
Mean Temp.....	—4·4	+1·1	+0·8	+1·6	+4·0	—2·9	+0·1	+3·1	—2·5
Mean dy. Rainfall	—0·03	+0·03	+0·01	+0·01	+0·02	a	—0·05	+0·05	a
No. of Rainy days	—5	+5	+3	—6	—3	—4	—5	+10	a

Duration of flowering.

	Feb.	Mar.	April
1869	16.....	.....	20
1870		18.....	12
1871		4.....	6
1872	21.....	.....	5
1873		18.....	20

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19. Polygala vulgaris. *Milkwort.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	Ap 29	May 7	May 4	Ap 23	Ap 25	Ap 25	Ap 25	Ap 18	May 4
Mean Temperature of previous 6 weeks	45·6	45·6	46·5	43·3	43·6	42·9	45·0	43·2	44·6
Mean daily Rainfall of ditto	0·04	0·07	0·08	0·07	0·06	0·02	0·08	0·06	0·05
No. of Rainy days in ditto...	13	25	27	17	21	5	13	14	18

Average date for 9 years ... ... Ap. 28
Mean Temp. of previous 6 wks. for 9 yrs. 44·3
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering...Ap. 18/72
Latest flowering ...May 7/66
Difference ... ...19 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+1	+9	+6	—5	—3	—3	—3	—10	+6
Mean Temp.....	+1·3	+1·3	+2·2	—1·0	—0·7	—1·4	+0·7	—1·1	+0·3
Mean dy. Rainfall	—0·03	a	+0·01	a	—0·01	—0·05	+0·01	—0·01	—0·02
No. of Rainy days	—5	+7	+9	—1	+3	—13	—5	—4	a

Duration of flowering.

	April	May.	June.	July	Aug.	Sep.	Oct.	Nov.
1869	25	.....	.....	.....	.....	28		
1870	25	.....	.....	.....				
1871	25	.....	.....	.....	.....	.....	.....	22
1872	18...	.....	.....	.....	.....	...17		
1873		4.....	.....	.....				

20. Silene inflata. *Bladder Campion.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	Jun 3	Jun 4	Jun 10	May 20	May 29	May 30	Jun 11	Jun 11	Jun 12
Mean Temperature of previous 6 weeks	52·6	49·0	51·2	49·4	48·6	49·3	49·2	47·8	49·4
Mean daily Rainfall of ditto	0·08	0·08	0·09	0·08	0·10	0·05	0·03	0·11	0·06
No. of Rainy days in ditto...	21	17	19	15	20	9	7	28	19

Average date for 9 years ... ... June 4
Mean Temp. of previous 6 wks. for 9 yrs. 49·8
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering...May 20/68
Latest flowering ...June 12/73
Difference ... ...24 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	—1	a	+6	—16	—7	—6	+7	+7	+8
Mean Temp.....	+2·8	—0·8	+1·4	—0·4	—1·2	—0·5	—0 6	—2·0	—0·4
Mean dy. Rainfall	+0·01	+0·01	+0·02	+0·01	+0·03	—0·02	—0·04	+0·04	—0·01
No. of Rainy days	+3	—1	+1	—3	+2	—9	—11	+10	+1

Duration of flowering.

	April	May.	June.	July.	Aug.	Sept.
1869		29...	.....	.....	17	
1870		30...	.....	.....	.....	17
1871			11.....	.....	.....	29
1872			11.....	.....	.....	17
1873			12.....	.....		

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21. Lychnis vespertina. *White Campion.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	May	May	May	May	May
First flower	**13**	**28**	**16**	**19**	**1**	**20**	**4**	**3**	**29**
Mean Temperature of previous 6 weeks	50·5	47·6	48·8	49·0	45·3	47·5	46·3	45·0	46·4
Mean daily Rainfall of ditto	0·07	0·06	0·09	0·08	0·04	0·06	0·09	0·09	0·05
No. of Rainy days in ditto	20	15	24	16	16	9	17	19	19

Average date for 9 years	May 15	Earliest flowering ...	May. 1/69
Mean Temp. of previous 6 wks. for 9 yrs.	47·4	Latest flowering ...	May 29/73
Mean daily Rainfall ditto ditto	0·06 in.	Difference	28 days.
Mean no. of Rainy days ditto ditto	19		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—2**	**+13**	**+1**	**+4**	**—14**	**+5**	**—11**	**—12**	**+14**
Mean Temp.....	+3·1	+0·2	+1·4	+1·6	—2·1	+0·1	—1·1	—2·4	—1·0
Mean dy. Rainfall	—0·01	—0·02	+0·01	a	—0·04	—0·02	+0·01	+0·01	—0·03
No. of Rainy days	+1	—4	+5	—3	—3	—10	—2	a	a

Duration of flowering.

	May	June	July	Aug.	Sept.	Oct.	Nov.
1869	1.....	.....	.....	.....	.....	...9	
1870	20	.....	.....	.....	.....	...9	
1871	4.....	.....	.....	.....	.....	.....	11
1872	3.....	.....	.....	.....	17		
1873	29	.....	.....				

22. Arenaria trinervis. *Three-nerved Sandwort.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Ap.	May	Ap.	Ap.	Ap.	Ap.	Ap.	May
First flower	**3**	**30**	**3**	**14**	**20**	**20**	**27**	**5**	**?4**
Mean Temperature of previous 6 weeks	47·1	45·3	46·2	41·9	41·6	41·3	45·7	43·4	44·6
Mean daily Rainfall of ditto	0·04	0·09	0·10	0·04	0·06	0·03	0·07	0·07	0·05
No. of Rainy days in ditto	15	26	28	17	20	8	14	20	18

Average date for 9 years	Ap. 24	Earliest flowering ...	Ap. 5/72
Mean Temp. of previous 6 wks. for 9 yrs.	43·3	Latest flowering ...	May 4/73
Mean daily Rainfall ditto ditto	0·07 in.	Difference	29 days.
Mean no. of Rainy days ditto ditto	18		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+9**	**+6**	**+9**	**—10**	**—4**	**—4**	**+3**	**—19**	**+10**
Mean Temp.....	+3·8	+2·0	+2·9	—1·4	—1·7	—2·0	+2·4	+0·1	+1·3
Mean dy. Rainfall	—0·03	+0·02	+0·03	—0·03	—0·01	—0·04	a	a	—0·02
No. of Rainy days	—3	+8	+10	—1	+2	—10	—4	+2	a

Duration of flowering.

	April.	May.	June.	July.	Aug.
1869	20	....	2		
1870	20	.....	21		
1871	27	.....			
1872	5.....	.....	...15		
1873		4.....	.....	12	

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23. Stellaria Holostea. *Greater Stitchwort.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Ap	Ap	Mch	Ap	Ap	Mch	Ap
First flower	**24**	**12**	**19**	**9**	**25**	**11**	**14**	**30**	**11**
Mean Temperature of previous 6 weeks	43·4	40·0	40·8	42·6	38·8	39·2	44·0	43·2	41·1
Mean daily Rainfall of ditto	0·04	0·09	0·12	0·07	0·06	0·06	0·05	0·08	0·08
No. of Rainy days in ditto	13	25	29	22	22	14	14	22	25

Average date for 9 years ... ... Ap. 10
Mean Temp. of previous 6 weeks for 9 yrs. 40·4
Mean daily Rainfall ditto ditto 0·06 in.
Mean No. of Rainy days ditto ditto 20

Earliest flowering ... Mch 25/69
Latest flowering ... Ap. 24/65
Difference ... ... 31 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+14**	**+2**	**+9**	**—1**	**—17**	**+1**	**+4**	**—12**	**+1**
Mean Temp.	+3·0	—0·4	+0·4	+2·2	—1·6	—1·2	+3·6	+2·8	+0·7
Mean dy. Rainfall	—0·02	+0·03	+0·06	+0·01	a	a	—0·01	+0·02	+0·02
No. of Rainy days	—7	+5	+9	+2	+2	—6	—6	+2	+5

Duration of flowering.

	Feb.	Mar.	April.	May.	June.	July.
1869		25...	.....	.....	...2	
1870			11.....	.....	.....	
1871			14.....	.....	...1	
1872		30...	.....	.....	15	
1873			11.....	.....	.....	...12

24. Malva sylvestris. *Common Mallow.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun	Jun	May	Jun	May	Jun	Jun	May
First flower	**28**	**19**	**9**	**?29**	**6**	**27**	**1**	**15**	**13**
Mean Temperature of previous 6 weeks	52·3	52·3	51·0	52·2	49·0	48·9	49·6	48·6	45·1
Mean daily Rainfall of ditto	0·07	0·08	0·09	0·10	0·10	0·05	0·05	0·11	0·05
No. of Rainy days in ditto	20	17	20	18	19	8	12	26	19

Average date for 9 years ... ... Jun 3
Mean Temp. of previous 6 weeks for 9 yrs. 49·7
Mean daily Rainfall ditto ditto 0·07 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering ... May 13/73
Latest flowering ... Jun. 19/66
Difference ... ... 37 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—6**	**+16**	**+6**	**—5**	**+3**	**—7**	**—2**	**+12**	**—21**
Mean Temp. ...	+2·6	+2·6	+1·3	+2·5	—0·7	—0·8	—0·1	—1·1	—4·6
Mean dy. Rainfall	a	+0·01	+0·02	+0·03	+0·03	—0·02	—0·02	+0·04	—0·02
No. of Rainy days	+2	—1	+2	a	+1	—10	—6	+8	+1

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869		6.....	.....	.....	.....	.....	21	
1870	27...	.....	.....	.....	.....	.....	3	
1871		1.....	.....	.....	.....	.....	...18	
1872		15.....	.....	.....	.....	.....	.....	...11
1873	18.....	.....	.....					

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25. Acer campestre. *Field Maple.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	May	Ap	May	Ap	May	Ap	May	May
First flower	**24**	**6**	**28**	**6**	**22**	**12**	**30**	**14**	**15**
Mean Temperature of previous 6 weeks	43·4	45·4	44·1	45·5	42·3	45·3	46·3	45·8	45·2
Mean daily Rainfall of ditto	0·04	0·07	0·11	0·06	0·06	0·03	0·09	0·08	0·05
No. of Rainy days in ditto...	13	26	30	13	20	6	16	22	19

Average date for 9 years	May 4	**Earliest flowering**...	Ap. 22/69
Mean Temp. of previous 6 weeks for 9 yrs.	45·5	**Latest flowering** ...	May 15/73
Mean daily Rainfall ditto ditto	0·06in	**Difference**	23 days
Mean No. of Rainy days ditto ditto	18		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—10**	**+2**	**—6**	**+2**	**—12**	**+8**	**—4**	**+10**	**+11**
Mean Temp......	—2·1	—0·1	—1·4	a	—3·2	—0·2	+0·8	+0·3	—0·3
Mean dy. Rainfall	—0·02	+0·01	+0·05	a	a	—0·03	+0·03	+0·02	—0·01
No. of Rainy days	—5	+8	+13	—5	+2	—12	—2	+4	+1

Duration of flowering.

	Mar.	April.	May.	June.	July.
1869		22.....	.....	2	
1870			12.....	...5	
1871		30	.....	1	
1872			14.....	13	
1873			15.....	22	

26. Æsculus Hippocastanum. *Horse Chestnut.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	May	Ap	May	Ap	May	Ap	Ap	May
First flower	**25**	**5**	**27**	**6**	**26**	**12**	**26**	**30**	**3**
Mean Temperature of previous 6 weeks	43·7	45·4	43·8	45·5	44·0	45·3	45·4	43·7	44·6
Mean daily Rainfall of ditto	0·04	0·07	0·11	0·06	0·06	0·03	0·07	0·09	0·04
No. of Rainy days in ditto...	13	26	31	13	21	6	13	20	18

Average date for 9 years	May 1	**Earliest flowering**...	Ap. 25/65
Mean Temp. of previous 6 weeks for 9 yrs.	44·9	**Latest flowering** ...	May 12/70
Mean daily Rainfall ditto ditto	0·06 in.	**Difference**	17 days.
Mean No. of Rainy days ditto ditto	18		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—6**	**+4**	**—4**	**+5**	**—5**	**+11**	**—5**	**—1**	**+2**
Mean Temp......	—1·2	+0·5	—1·1	+0·6	—0·9	+0·4	+0·5	—1·2	—0·3
Mean dy. Rainfall	—0·02	+0·01	+0·05	a	a	—0·03	+0·01	+0·03	—0·02
No. of Rainy days	—5	+8	+13	—5	+3	—12	—5	+2	a

Duration of flowering.

	April.	May.	June.
1869	26.....	27	
1870		12.....	13
1871	26.....	.....	1
1872	30	.....	2
1873		3.....	22

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27. Geranium pratense. *Meadow Crane's-bill.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun	May	May	May	May	May	Jun	Jun
First flower	25	13	29	19	30	26	26	9	2
Mean Temperature of previous 6 weeks	51·7	51·2	49·2	49·0	48·6	48·8	48·8	47·7	46·7
Mean daily Rainfall of ditto	0·07	0·07	0·10	0·08	0·10	0·05	0·09	0·10	0·06
No. of Rainy days in ditto...	21	15	23	16	20	8	17	27	20

Average date for 9 years... ... ... May 30
Mean Temp. of previous 6 wks. for 9 yrs. 49·1
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering...May 19/68
Latest flowering ...June13/66
Difference ... ...25 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	−5	+14	−1	−11	a	−4	−4	+10	+3
Mean Temp.....	+2·6	+2·1	+0·1	−0·1	−0·5	−0·3	−0·3	−1·4	−2·4
Mean dy. Rainfall	a	a	+0·03	+0·01	+0·03	−0·02	+0·02	+0·03	−0·01
No. of Rainy days	+3	−3	+5	−2	+2	−10	−1	+9	+2

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	30	.....	.....	.....	.....	.....	28	
1870	26...	.....	.....	.....	.....	3		
1871	26...	.....	.....	.....	.....	.....	...10	
1872		9.....	.....	.....	.....			
1873		2.....	.....					

28. Geranium molle. *Dove's-foot.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	May	Ap	Ap	Ap	Ap	Mch	May
First flower	28	28	1	9	20	26	24	20	2
Mean Temperature of previous 6 weeks	45·3	45·4	45·4	42·6	41·6	43·1	44·8	44·3	44·4
Mean daily Rainfall of ditto	0·04	0·09	0·10	0·07	0·06	0·01	0·08	0·05	0·04
No. of Rainy days in ditto...	13	26	30	22	20	4	14	22	18

Average date for 9 years... ... ... Ap. 21
Mean Temp. of previous 6 wks. for 9 yrs. 42·6
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...Mch20/72
Latest flowering ...May 2/73
Difference ... ...43 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+7	+7	+10	−12	−1	+5	+3	−32	+11
Mean Temp.....	+2·7	+2·8	+2·8	a	−1·0	+0·5	+2·2	+1·7	+1·8
Mean dy. Rainfall	−0·03	+0·02	+0·03	a	−0·01	−0·06	+0·01	−0·02	−0·03
No. of Rainy days	−6	+7	+11	+3	+1	−15	−5	+3	−1

Duration of flowering.

	Mar.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.
1869		20...	.....	.....	.....	.....	.....	.....	21
1870		26	.....	.....	.....	.....	.....	.....	3
1871		24	.....	.....	.....	.....	.....	.....	...16
1872	20	.....	.....	.....	.....	.....	.....	.....	27
1873			2.....	.....	.....				

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29. Geranium lucidum. *Shining Crane's-bill.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	May	May	May	Ap	Ap	Ap	May	May
First flower	27	2	3	4	26	27	30	3	12
Mean Temperature of previous 6 weeks	44·7	45·3	46·2	44·9	44·0	43·0	46·3	45·0	45·0
Mean daily Rainfall of ditto	0·04	0 09	0·10	0·07	0·06	0·01	0·09	0·09	0·05
No. of Rainy days in ditto...	13	27	28	14	21	3	16	19	19

Average date for 9 years ... ... May 2
Mean Temp. of previous 6 weeks for 9 yrs. 45·1
Mean daily Rainfall ditto ditto 0·06in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering...Ap. 26/69
Latest flowering...May 12/73
Difference ... ...16 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	—5	a	+1	+2	—6	—5	—2	+1	+10
Mean Temp.	—0·4	+0·2	+1·1	—0·2	—1·1	—2·1	+1·2	—0·1	—0·1
Mean dy.Rainfall	—0·02	+0·03	+0·04	+0·01	a	—0·05	+0·03	+0·03	—0·01
No. of Rainy days	—5	+9	+10	—4	+3	—15	—2	+1	+1

Duration of flowering.

	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.
1869	26...	.....	.....	.....	...13			
1870	27...	.....	.....	.....	.....	27		
1871	30	.....	.....	.....	.....	21		
1872		3.....	.....					
1873		12.....	.....	.....				

30. Geranium Robertianum. *Herb-Robert.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	May	May	Ap	Ap	May	Ap	Ap
First flower	27	30	1	?4	27	28	3	30	28
Mean Temperature of previous 6 weeks	44·7	45·3	45·4	44·9	44·5	42·7	46·5	43·7	43·2
Mean daily Rainfall of ditto	0·04	0·09	0·10	0·07	0·06	0·01	0·09	0·09	0·04
No. of Rainy days in ditto...	13	26	30	14	20	3	17	20	19

Average date for 9 years ... ... Ap. 30
Mean Temp. of previous 6 weeks for 9 yrs. 44·6
Mean daily Rainfall ditto ditto 0·06 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering Ap 27/65-9
Latest flowering ...May 4/68
Difference ... ...7 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	—3	a	+1	+4	—3	—2	+3	a	—2
Mean Temp.....	+0·1	+0·7	+0·8	+0·3	—0·1	—1·9	+1·9	—0·9	—1·4
Mean dy.Rainfall	—0·02	+0·03	+0·04	+0·01	a	—0·05	+0·03	+0·03	—0·02
No.of Rainy days	—5	+8	+12	—4	+2	—15	—1	+2	+1

Duration of flowering.

	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	27	.....	.....	.....	.....	.....	.....	6	
1870	28	.....	.....	.....	.....	.....	...9		
1871		3.....	.....	.....	.....	.....	.....	...16	
1872	30	.....	.....	.....	.....	.....	.....	.....	2
1873	28	.....	.....	.....					

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31. Euonymus europæus. *Spindle Tree.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	May	May	May	May	May
First flower	16	29	19	16	13	27	17	24	29
Mean Temperature of previous 6 weeks	51·0	47·6	48·9	48·1	48·7	48·9	46·9	45·6	46·4
Mean daily Rainfall of ditto	0·07	0·06	0·09	0·07	0·09	0·05	0·09	0·09	0·05
No. of Rainy days in ditto...	20	15	24	16	20	8	17	27	19

Average date for 9 years...	May 21
Mean Temp. of previous 6 wks. for 9 yrs.	48·2
Mean daily Rainfall ditto ditto	0·08 in.
Mean No. of Rainy days ditto ditto	19

Earliest flowering...	May 13/69
Latest flowering	May 29/67-73
Difference	16 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	—5	+8	—2	—5	—8	+6	—4	+3	+8
Mean Temp.....	+2·8	—0·6	+0·7	—0·1	+0·5	+0·7	—1·3	—2·6	—1·8
Mean dy. Rainfall	—0·01	—0·02	+0·01	—0·01	+0·01	—0·03	+0·01	+0·01	—0·03
No. of Rainy days	+1	—4	+5	—3	+1	—11	—2	+8	a

Duration of flowering.

	April.	May.	June.	July.	Aug.
1869		13.....	2		
1870		27...	14		
1871		17...26			
1872		24...	13		
1873		29...	.....	...8	

32. Medicago lupulina. *Black Medic.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	May	May	Ap	Ap	Ap	Ap	Ap	May
First flower	?21	1	6	18	19	18	20	13	1
Mean Temperature of previous 6 weeks	42·1	45·2	47·1	42·3	41·3	40·5	44·6	43·6	44·1
Mean daily rainfall of ditto	0·04	0·09	0·07	0·03	0·06	0·03	0·08	0·06	0·04
No. of Rainy days in ditto...	15	26	25	16	20	8	17	15	19

Average date for 9 years	Ap. 23
Mean Temp. of previous 6 weeks for 9 yrs.	43·0
Mean daily Rainfall ditto ditto	0·07 in.
Mean No. of Rainy days ditto ditto	18

Earliest flowering...	Ap. 13/72
Latest flowering ...	May 6/67
Difference	23 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	—2	+8	+13	—5	—4	—5	—3	—10	+8
Mean Temp.....	—0·9	+2·2	+4·1	—0·7	—1·7	—2·5	+1·6	+0·6	+1·1
Mean dy. Rainfall	—0·03	+0·02	a	—0·04	—0·01	—0·04	+0·01	—0·01	—0·03
No. of Rainy days	—3	+8	+7	—2	+2	—10	—1	—3	+1

Duration of flowering.

	April	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1869	19...	.....	.....	.....	.....	.....	23	
1870	18...	.....	.....	.....	.....	.....	...18	
1871	20...	.....	.....	.....	.....	.....	.....	16
1872	13.....	.....	.....	.....	.....	.....		
1873		1.....	.....	.....				

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33. Trifolium pratense. *Red Clover.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	Ap **28**	Ap **30**	May **8**	May **1**	Ap **24**	May **12**	Ap **29**	Ap **30**	May **2**
Mean Temperature of previous 6 weeks	45·3	45·3	47·9	44·4	45·1	45·3	46·2	43 7	44·4
Mean daily Rainfall of ditto	0·04	0·09	0·07	0·07	0·06	0·03	0·09	0·09	0·04
No. of Rainy days in ditto...	13	26	23	16	21	6	16	20	18

Average date for 9 years... ... ... May 2
Mean Temp. of previous 6 wks. for 9 yrs. 45·1
Mean daily Rainfall ditto ditto 0·06 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering...Ap. 24/69
Latest flowering ...May12/73
Difference ... ...18 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—4**	**—2**	**+6**	**—1**	**—8**	**+10**	**—3**	**—2**	**a**
Mean Temp. ...	+0·2	+0·2	+2·8	—0·7	—2·0	+0 2	+1·1	—1·4	—0·7
Mean dy. Rainfall	—0·02	+0·03	+0·01	+0·01	a	—0·03	+0·03	+0·03	—0·02
No. of Rainy days	—5	+8	+5	—2	+3	—12	—2	+2	a

Duration of flowering.

	April	May	June	July	Aug.	Sept.	Oct.	Nov.
1869	24...	.....	.....	.....	.....	.....	.....	...16
1870		12.....	.....	.....	.....	.....	30	
1871	29	.....	.....	.....	.....	.....	.....	...16
1872	30	.....	.....	.....	.....	.....	.....	22
1873		2.....	.....	.....	.....			

34. Trifolium repens. *Dutch Clover.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	May **13**	May **23**	May **15**	May **19**	May **5**	May **18**	May **1**	Ap **30**	May **22**
Mean Temperature of previous 6 weeks	50·5	47·4	49·0	49·0	46·2	46·9	46·3	43·7	45·9
Mean daily Rainfall of ditto	0·07	0·06	0·09	0·08	0·07	0·06	0·09	0·09	0·05
No. of Rainy days in ditto...	20	18	25	16	18	9	16	20	19

Average date for 9 years ... ... May 13
Mean Temp. of previous 6 wks. for 9 yrs. 47·1
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...Ap. 30/72
Latest flowering ...May 23/66
Difference ... ...24 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**a**	**+10**	**+2**	**+6**	**—8**	**+5**	**—12**	**—14**	**+9**
Mean Temp.....	+3·4	+0·3	+1·9	+1·9	—0·9	—0·2	—0·8	—3·4	—1·2
Mean dy. Rainfall	a	—0·01	+0·02	+0·01	a	—0·01	+0·02	+0·02	—0·02
No. of Rainy days	+1	—1	+6	—3	—1	—10	—3	+1	a

Duration of flowering.

	April	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1869		5.....	.....	.....	.....	.....	.....	2
1870		18.....	.....	.....	.....	.....	...18	
1871		1.....	.....	.....	.....	.....	.....	12
1872	30	.....	.....	.....	.....	.....		
1873		22...	.....	.....	.....			

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35. Lotus corniculatus. *Bird's-foot Trefoil.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	May	May	May	May	May
First flower	**10**	**28**	**?18**	**13**	**1**	**12**	**6**	**20**	**13**
Mean Temperature of previous 6 weeks	50·1	47·6	48·8	47·2	45·3	45·3	46·3	45 9	45·1
Mean daily Rainfall of ditto	0·06	0·06	0·09	0·07	0·04	0·03	0·09	0·09	0·05
No. of Rainy days in ditto...	17	15	24	16	16	6	17	25	19

Average date for 9 years... ... ... May 13
Mean Temp. of previous 6 wks. for 9 yrs. 47·1
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...May. 1/69
Latest flowering ...May 28/66
Difference ... ...27 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—3**	**+15**	**+5**	**a**	**—12**	**—1**	**—7**	**+7**	**a**
Mean Temp.....	+3·0	+0·5	+1·7	+0·1	—1·8	—1·8	—0·8	—1·2	—2·0
Mean dy. Rainfall	—0·01	—0·01	+0·02	a	—0·03	—0·04	+0·02	+0·02	—0·02
No. of Rainy days	—2	—4	+5	—3	—3	—13	—2	+6	a

Duration of flowering.

	May	June	July	Aug.	Sept.	Oct.	Nov.
1869	1.....	.....	.....	.....	.....	...5	
1870	12...	.....	.....	.....	.....	...3	
1871	6.....	.....	.....	.....	.....	...5	
1872	20.....	.....	.....	.....	.....		
1873	13...	.....	.....	.....			

36. Anthyllis vulneraria. *Ladies' Fingers.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Jun	May	May	May	May	May	May	May	May
First flower	**?1**	**21**	**15**	**2**	**11**	**20**	**17**	**1**	**8**
Mean Temperature of previous 6 weeks	52·6	47·1	49 0	44·4	48·3	47·5	46·9	44·0	44·6
Mean daily Rainfall of ditto	0·08	0·07	0·09	0·07	0·09	0·06	0·09	0·09	0·06
No. of Rainy days in ditto...	20	20	25	16	20	9	17	20	21

Average date for 9 years... ... ... May 14
Mean Temp. of previous 6 wks. for 9 yrs. 47·3
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...May 1/72
Latest flowering ...June1/65
Difference ... ...31 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+18**	**+7**	**+1**	**—12**	**—3**	**+6**	**+3**	**—13**	**—6**
Mean Temp.....	+5·3	—0·2	+1·7	—2·9	+1·0	+0·2	—0·4	—3·3	—2·7
Mean dy. Rainfall	+0·01	a	+0·02	a	+0·02	—0·01	+0·02	+0·02	—0·01
No. of Rainy days	+1	+1	+6	—3	+1	—10	—2	+1	+2

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	11.....	.....	.....	.....	.....			
1870	20...	.....	.....	.....	.....	...9		
1871	17...	.....	.....	....	29			
1872	1.....	.....	.....	.....	.....			
1873	8.....	.....	.....					

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37. Vicia Sepium. *Bush Vetch.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	May	Ap	Ap	Ap	Ap	Ap	Ap
First flower	**19**	**27**	**5**	**14**	**18**	**21**	**25**	**15**	**28**
Mean Temperature of previous 6 weeks	41·2	45·1	46·8	41·9	41·2	41·5	45·0	43·5	43·2
Mean daily Rainfall of ditto	0·04	0·07	0·08	0·04	0·06	0·03	0 08	0·06	0 04
No. of Rainy days in ditto...	16	26	26	17	20	7	13	15	19

Average date for 9 years ... ... Ap. 22
Mean Temp. of previous 6 wks. for 9 yrs. 42·8
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering...Ap. 14/68
Latest flowering ...May 5/67
Difference ... ...21 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—3**	**+5**	**+13**	**—8**	**—4**	**—1**	**+3**	**—7**	**+6**
Mean Temp.....	—1·6	+2·3	+4·0	—0·9	—1·6	—1·3	+2·2	+0·7	+0·4
Mean dy. Rainfall	—0·03	a	+0·01	—0·03	—0·01	—0·04	+0·01	—0·01	—0·03
No. of Rainy days	—2	+8	+8	—1	+2	—11	—5	—3	+1

Duration of flowering.

	April	May.	June.	July	Aug.	Sep.	Oct.	Nov.
1869	18...	.....	.....	.....	.....	.....	.....	7
1870	21	.....	.....	.....	.....	.....	9	
1871	25	.....	.....	.....	.....	.....	.....	17
1872	15...	.....	.....	.....	.....	.....		
1873	28	.....	.....	.....	.....			

38. Lathyrus pratensis. *Meadow Vetchling.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun	Jun	May	Jun	May	May	Jun	Jun
First flower	**31**	**11**	**10**	**16**	**10**	**21**	?**28**	**4**	**3**
Mean Temperature of previous 6 weeks	52·5	50·4	51·2	48·1	49·5	48·0	48·8	48·0	47·0
Mean daily Rainfall of ditto	0·06	0·07	0·09	0·07	0·10	0·05	0·09	0·09	0·06
No. of Rainy days in ditto...	19	15	19	16	19	8	16	27	21

Average date for 9 years ... ... June 1
Mean Temp. of previous 6 wks. for 9 yrs. 49·4
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering...May16/68
Latest flowering ...June 11/66
Difference ... ...26 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—1**	**+10**	**+9**	**—16**	**+9**	**—11**	**—4**	**+3**	**+2**
Mean Temp.....	+3·1	+1·0	+1·8	—1·3	+0·1	—1·4	—0·6	—1·4	—2·4
Mean dy. Rainfall	—0·01	a	+0·02	a	+0·03	—0·02	+0·02	+0·02	—0·01
No. of Rainy days	+1	—3	+1	—2	+1	—10	—2	+9	+3

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.
1869		10.....	.....	.....	7	
1870	21...	.....	.....	.....	17	
1871	28	.....	.....	.....	.....	2
1872		4.....	.....	.....	.....	
1873		3.....	.....	.....		

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39. Hippocrepis comosa. *Horse-shoe Vetch.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	May	May	May	May	May
First flower	**13**	**29**	**29**	**13**	**17**	**23**	**19**	**3**	**22**
Mean Temperature of previous 6 weeks	50·5	47·6	49·2	47·2	49·5	48·5	47·3	45·0	45·9
Mean daily Rainfall of ditto	0·07	0·06	0·10	0·07	0·09	0·05	0·09	0·09	0·05
No. of Rainy days in ditto...	20	15	23	16	19	8	18	19	19

Average date for 9 years... ... ... May 19
Mean Temp. of previous 6 wks. for 9 yrs. 47.9
Mean daily Rainfall ditto ditto 0·08 in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering...May 3/72
Latest flowering May29/66-67
Difference ... ...26 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—6**	**+10**	**+10**	**—6**	**—2**	**+4**	**a**	**—16**	**+3**
Mean Temp.....	+2·6	—0·3	+1·3	—0·7	+1·6	+0·6	—0·6	—2·9	—2 0
Mean dy. Rainfall	—0·01	—0·02	+0·02	—0·01	+0·01	—0·03	+0·01	+0·01	—0·03
No. of Rainy days	+1	—4	+4	—3	a	—11	—1	a	a

Duration of flowering.

	May.	June.	July.	Aug.	Sept.
1869	17.....	...			
1870	23...	.....	4		
1871	19.....	.....			
1872	3.....	.....	.....	.....	.....
1873	22...	.....	...10		

40. Onobrychis sativa. *Sanfoin. Cock's-head.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	May	May	May	May	Jun
First flower	**19**	**28**	**31**	**13**	**15**	**12**	**17**	**20**	**3**
Mean Temperature of previous 6 weeks	51·1	47·6	49·4	47 2	49·1	45·3	46·9	45·9	47·0
Mean daily Rainfall of ditto	0·07	0·06	0·09	0·07	0·09	0·03	0·09	0·09	0·06
No. of Rainy days in ditto...	21	15	22	16	18	6	17	25	21

Average date for 9 years ... ... May 21
Mean Temp. of previous 6 weeks for 9 yrs. 48·2
Mean daily Rainfall ditto ditto 0·08 in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering...May12/73
Latest flowering ...Jun.3/73
Difference ... ...22 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—2**	**+7**	**+10**	**—8**	**—6**	**—9**	**—4**	**—1**	**+13**
Mean Temp. • ...	+2·9	—0·6	+1·2	—1·0	+0·9	—2·9	—1·3	—2·3	—1·2
Mean dy. Rainfall	—0·01	—0·02	+0·01	—0·01	+0·01	—0·05	+0·01	+0·01	—0·02
No. of Rainy days	+2	—4	+3	—3	—1	—13	—2	+6	+2

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	15.....	.....	.....	.....	.....	30		
1870	12.....	.....	.....	.....	17			
1871	17...	.....	.....	.....	.....	.....	...7	
1872	20	.....	.....	.....	.....			
1873		3.....	.....	.....				

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41. Prunus spinosa. *Sloe. Black-thorn.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Mch	Ap	Mch	Feb	Ap	Ap	Mch	Ap
First flower	**16**	**28**	**7**	**29**	**20**	**16**	**1**	**30**	**10**
Mean Temperature of previous 6 weeks	39·9	36·3	37·5	42·5	42·8	39·8	43·6	43·2	40·9
Mean daily rainfall of ditto	0·02	0·06	0·10	0·08	0·10	0·03	0·04	0·08	0·08
No. of Rainy days in ditto...	13	22	26	25	22	10	13	22	26

Average date for 9 years	Mch.31	**Earliest flowering...Feb.20/69**	
Mean Temp. of previous 6 weeks for 9 yrs.	39·4	**Latest flowering**	Ap.16/65-70
Mean daily Rainfall ditto ditto	0·07 in.	**Difference ... ...56 days.**	
Mean No. of Rainy days ditto ditto	22		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+16**	**—3**	**+7**	**—2**	**—40**	**+16**	**+1**	**—1**	**+10**
Mean Temp.....	+0·5	—2·5	—1·9	+3·1	+3·4	+0·4	+4·2	+3·8	+1·5
Mean dy. Rainfall	—0·05	—0·01	+0·03	+0·01	+0·03	—0·04	—0·03	+0·01	+0·01
No. of Rainy days	—9	a	+4	+3	a	—12	—9	a	+4

Duration of flowering.

	Feb.	Mar.	April	May.
1869	20.....	.....	20	
1870			16.....	21
1871			1	12
1872		30	.....	...9
1873			10.....	22

42. Spiræa Ulmaria. *Meadow-sweet.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Jun	Jun	Jun	Jun	Jun	Jun	Jun	Jun	Jun
First flower	**18**	**?12**	**23**	**2**	**13**	**11**	**25**	**21**	**23**
Mean Temperature of previous 6 weeks	55·2	50·8	51·2	53·0	49·9	51·7	52·1	50·9	52·0
Mean daily Rainfall of ditto	0·07	0·07	0·08	0·06	0·11	0·05	0·09	0·10	0·04
No. of Rainy days in ditto	15	15	21	14	20	10	15	24	16

Average date for 9 years	June16	**Earliest flowering...June 2/68**	
Mean Temp. of previous 6 weeks for 9 yrs.	51·9	**Latest flowering ...Jun 25/71**	
Mean daily Rainfall ditto ditto	0·07 in.	**Difference ... ...23 days.**	
Mean No. of Rainy days ditto ditto	16		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+2**	**—4**	**+7**	**—14**	**—3**	**—5**	**+9**	**+5**	**+7**
Mean Temp.....	+3·3	—1·1	—0·7	+1·1	—2·0	—0·2	+0·2	—1·0	+0·1
Mean dy. Rainfall	a	a	+0 01	—0·01	+0·04	—0·02	+0·02	+0·03	—0·03
No. of Rainy days	—1	—1	+5	—2	+4	—6	—1	+8	a

Duration of flowering.

	June.	July.	Aug.	Sep.	Oct.	Nov.
1869	13.....	.....	.....	.....	.....	2
1870	11.....	.....	.....	.....	3	
1871	25...	.....	.....	.....	.....	1
1872	21.....	.....	.....	.....		
1873	23...	.....	.....			

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43. Poterium sanguisorba. *Salad Burnet.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	May	May	Ap	Ap	May	May	Ap	May
First flower	**30**	**3**	**9**	**25**	**27**	**12**	**4**	**29**	**8**
Mean Temperature of previous 6 weeks	45·8	45·4	48·2	43·3	44·5	45·3	46·8	43·6	44·6
Mean daily Rainfall of ditto	0·04	0·09	0·07	0·07	0·06	0·03	0·09	0·09	0·06
No. of Rainy days in ditto...	13	27	24	18	20	6	17	20	21

Average date for 9 years ... ... May 3
Mean Temp. of previous 6 weeks for 9 yrs. 45·3
Mean daily Rainfall ditto ditto 0·07in
Mean No. of Rainy days ditto ditto 18

Earliest flowering...Ap.25/68
Latest flowering ...May12/70
Difference ... ...17 days

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—3**	**a**	**+6**	**—8**	**—6**	**+9**	**+1**	**—4**	**+5**
Mean Temp.....	+0·5	+0·1	+2·9	—2·0	—0·8	a	+1·0	—1·7	—0·7
Mean dy. Rainfall	—0·03	+0·02	a	a	—0·01	—0·04	+0·02	+0·02	—0·01
No. of Rainy days	—5	+9	+6	a	+2	—12	—1	+2	+3

Duration of flowering.

	Mar.	April.	May.	June.	July.
1869		27...	27		
1870			12.....	.....	...
1871			4.....1		
1872		29	.....	.....	
1873			8.....	.....	...8

44. Potentilla anserina. *Silver-weed.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	May	May	May	May	May
First flower	**12**	**21**	**16**	**5**	**12**	**12**	**8**	**9**	**18**
Mean Temperature of previous 6 weeks	50·4	47·1	48·8	45·2	48·5	45·3	46·4	46·3	45·3
Mean daily Rainfall of ditto	0·07	0·07	0·09	0·07	0·09	0·03	0·09	0·08	0·05
No. of Rainy days in ditto...	19	20	24	14	20	6	17	22	18

Average date for 9 years May13
Mean Temp. of previous 6 weeks for 9 yrs. 47·1
Mean daily Rainfall ditto ditto 0·07 in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering ..May25/68
Latest flowering ...May21/66
Difference ... ...16 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—1**	**+8**	**+3**	**—8**	**—1**	**—1**	**—5**	**—4**	**+5**
Mean Temp.....	+3·3	a	+1·7	—1·9	+1·4	—1·8	—0·7	—0·8	—1·8
Mean dy. Rainfall	a	a	+0·02	a	+0·02	—0·04	+0·02	+0·01	—0·02
No. of Rainy days	a	+1	+5	—5	+1	—13	—2	+3	—1

Duration of flowering.

	May.	June.	July.	Aug.	Sep.	Oct.
1869	12.....	.....	.....	.....	..7	
1870	12.....	.....	.....	.....	.....	18
1871	8.....	.....	.....	.....	3	
1872	9.....	.....	.....	.....	.....	
1873	18.....	.....	.....	.....		

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45. Potentilla Tormentilla. *Tormentil.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	May	May	May	May	May	May	May	May
First flower	29	9	8	7	5	15	7	1	11
Mean Temperature of previous 6 weeks	45·6	45·5	47·9	45·6	46·2	46·0	46·3	44·0	44.7
Mean daily Rainfall of ditto	0·04	0 07	0·07	0·06	0·07	0·06	0·09	0·09	0·05
No. of Rainy days in ditto...	13	26	23	13	18	9	17	20	20

Average date for 9 years ... ... May 7
Mean Temp. of previous 6 weeks for 9 yrs. 46·2
Mean daily Rainfall ditto ditto 0 06in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering...Ap. 29/65
Latest flowering...May 15/70
Difference ... ...16 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	—8	+2	+1	a	—2	+8	a	—6	+4
Mean Temp.	—0·6	—0·7	+1·7	—0·6	a	—0·2	+0·1	—2.2	—1·5
Mean dy. Rainfall	—0·02	+0·01	+0·01	a	+0·01	a	+0·03	+0·03	—0·01
No. of Rainy days	—5	+8	+5	—5	a	—9	—1	+2	+2

Duration of flowering.

	May.	June.	July.	Aug.	Sep.	Oct.	Nov.
1869	5.....	.....	.....	.....	.....	.....	...4
1870	15.....	.....	.....	.....	.....	.....	13
1871	7.....	.....	.....	.....	.....	.....	9
1872	1.....	.....	.....	.....	.....		
1873	11.....	.....	.....				

46. Potentilla Fragariastrum. *Barren Strawberry.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Feb	Feb	Mch	Jan	Mch	Mch	Feb	Mch
First flower	7	17	14	2	18	16	18	24	12
Mean Temperature of previous 6 weeks	37·5	41·6	37·1	40·8	43·4	36·0	42·8	42·3	35·8
Mean daily Rainfall of ditto	0·04	0·17	0·13	0·10	0·15	0·09	0·06	0·14	0·07
No. of Rainy days in ditto...	18	33	28	19	30	21	22	34	23

Average date for 9 years ... ... Mch 2
Mean Temp. of previous 6 wks. for 9 yrs. 38·8
Mean daily Rainfall ditto ditto 0·09 in.
Mean no. of Rainy days ditto ditto 24

Earliest flowering...Jan. 18/69
Latest flowering ...Ap. 7/65
Difference ... ...79 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+36	—13	—16	a	—43	+14	+16	—6	+10
Mean Temp.....	—1·3	+2·8	—1·7	+2·0	+4·6	—2·8	+4·0	+3·5	—3·0
Mean dy. Rainfall	—0·05	+0·08	+0·04	+0·01	+0·06	a	—0·03	+0·05	—0·02
No. of Rainy days	—6	+9	+4	—5	+6	—3	—2	+10	—1

Duration of flowering.

	Jan.	Feb.	Mar.	April.	May.	June.
1869	18.....	.....	.....	.....	.....	2
1870			16.....	.....	24	
1871			18.....	.....	26	
1872		24...	.....	.....	.....	15
1873			12.....	.....		2

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47. Rubus cæsius. *Dewberry.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun	May	May	May	May	May	May	May
First flower	21	1	18	16	18	21	17	25	31
Mean Temperature of previous 6 weeks	51·3	48·1	48·8	48·1	49·6	48·0	46·9	45·7	46·6
Mean daily Rainfall of ditto	0·08	0·07	0·09	0·07	0·09	0·05	0·09	0·09	0·05
No. of Rainy days in ditto...	22	15	24	16	19	8	17	27	19

Average date for 9 years... ... ... May 22
Mean Temp. of previous 6 wks. for 9 yrs. 48·4
Mean daily Rainfall ditto ditto 0·08 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...May16/68
Latest flowering ...June 1/66
Difference ... ...16 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	−1	+10	−4	−6	−4	−1	−5	+3	+9
Mean Temp.....	+2·9	−0·3	+0·4	−0·3	+1·2	−0·4	−1·5	−2·7	−1·8
Mean dy. Rainfall	a	−0·01	+0·01	−0·01	+0·01	−0·03	+0·01	+0·01	−0·03
No. of Rainy days	+3	−4	+5	−3	a	−11	−2	+8	a

Duration of flowering.

	May.	June	July	Aug.	Sep.	Oct	Nov.
1869	18.....	.....	.....	.....	.....	29	
1870	21...	.....	.....	.....	.....	...9	
1871	17.....	.....	.....	.....	.....	24	
1872	25...	.....	.....	.....	.....	.....	28
1873	31	.....	.....	.....			

48. Geum urbanum. *Common Avens.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	May	Ap	May	May	May	Ap	Ap	May
First flower	25	? 2	26	3	1	12	25	29	11
Mean Temperature of previous 6 weeks	43·7	45·3	43·3	44·7	45·3	45·3	45·0	43·6	44·7
Mean daily Rainfall of ditto	0·04	0·09	0·11	0·07	0·04	0·03	0·08	0·09	0·05
No. of Rainy days in ditto...	13	27	30	15	16	6	13	20	20

Average date for 9 years ... ... May 2
Mean Temp. of previous 6 weeks for 9 yrs. 45·1
Mean daily Rainfall ditto ditto 0·06 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering Ap25/65-71
Latest flowering ...May12/70
Difference ... ...17 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	−7	a	−6	+1	−1	+10	−7	−3	+9
Mean Temp.....	−1·4	+0·2	−1·8	−0·4	+0·2	+0·2	−0·1	−1·5	−0·4
Mean dy. Rainfall	−0·02	+0·03	+0·05	+0·01	−0·02	−0·03	+0·02	+0·03	−0·01
No. of Rainy days	−5	+9	+12	−3	−2	−12	−5	+2	+2

Duration of flowering.

	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869		1.....	.....	.....	.....	.....	.....	...16	
1870		12.....	.....	.....	.....	.....	.....	...13	
1871	25...	.....	.....	.....	.....	.....	.....	.....	1
1872	29	.....	.....	.....	.....	.....	.....	.....	1
1873		11.....	.....	.....	.....				

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49. Rosa canina. *Dog Rose.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun	Jun	May	May	May	May	Jun	Jun
First flower	**22**	**9**	**1**	**23**	**23**	**30**	**26**	**3**	**13**
Mean Temperature of previous 6 weeks	51·4	49·4	49·5	50·5	49·1	49·3	48·8	47 9	49·6
Mean daily Rainfall of ditto	0·08	0·06	0·08	0·09	0·10	0·05	0·09	0·09	0·06
No. of Rainy days in ditto...	22	15	21	18	21	9	17	27	20

Average date for 9 years ... ... May 30
Mean Temp. of previous 6 wks. for 9 yrs. 49·1
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering ...May22/65
Latest flowering ...June 13/73
Difference ... ...22 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—8**	**+10**	**+2**	**—7**	**—7**	a	**—4**	**+4**	**+14**
Mean Temp.....	+2·3	+0·3	+0·4	+1·4	a	+0·2	—0·3	—1·2	+0·5
Mean dy. Rainfall	+0·01	—0·01	+0·01	+0·02	+0·03	—0·02	+0·02	+0·02	—0·01
No. of Rainy days	+4	—3	+3	a	+3	—9	—1	+9	+2

Duration of flowering.

	May.	June.	July.	Aug.
1869	23.....	.....		
1870	30	.....	15	
1871	26...	.....		
1872		3.....		
1873		13.....	.....	

50. Cratægus Oxyacantha. *Hawthorn.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	Ap	May	May	May	May
First flower	**7**	**14**	**7**	**6**	**30**	**14**	**2**	**9**	**10**
Mean Temperature of previous 6 weeks	48·9	45·8	47·5	45·5	45·2	45·8	46·4	46·3	44·6
Mean daily Rainfall of ditto	0·04	0·08	0·07	0·06	0·04	0·04	0·09	0·08	0·06
No. of Rainy days in ditto...	16	25	24	13	17	8	16	22	20

Average date for 9 years... ... ... May 8
Mean Temp. of previous 6 wks. for 9 yrs. 46·4
Mean daily Rainfall ditto ditto 0·06 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering ...Ap. 30/69
Latest flowering May14/66-70
Difference ... ...15 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—1**	**+6**	**—1**	**—2**	**—9**	**+6**	**—6**	**+1**	**+2**
Mean Temp.....	+2·5	—0·6	+1·1	—0·9	—1·2	—0·6	a	—0·1	—1·8
Mean dy. Rainfall	—0·02	+0·02	+0·01	a	—0·02	—0·02	+0·03	+0·02	a
No. of Rainy days	—2	+7	+6	—5	—1	—10	—2	+4	+2

Duration of flowering.

	April.	May.	June.	July.
1869	30	.....	2	
1870		14.....	14	
1871		2.....	1	
1872		9.....	15	
1873		10.....	.....	1

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51. Epilobium montanum. *Broad Willow-herb.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Jun	Jun	Jun	Jun	Jun	Jun	Jun	Jun	Jun
First flower	**5**	**13**	**14**	?**4**	**8**	**4**	**16**	**17**	**12**
Mean Temperature of previous 6 weeks	52·9	51·2	52·0	53·1	49·4	49·8	50 5	49·3	49·4
Mean daily Rainfall of ditto	0·08	0·07	0·09	0·05	0·10	0·06	0·04	0·10	0·06
No. of Rainy days in ditto	21	15	21	13	19	11	10	25	19

Average date for 9 years	June10	Earliest flowering	Jun 4/68-70
Mean Temp. of previous 6 weeks for 9 yrs.	50·7	Latest flowering	...Jun 17/72
Mean daily Rainfall ditto ditto	0·07in.	Difference ...	...13 days.
Mean No. of Rainy days ditto ditto	16		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—5**	**+3**	**+4**	**—6**	**—2**	**—6**	**+6½**	**+7**	**+2**
Mean Temp.....	+2·2	+0·5	+1·3	+2·4	—1·3	—0·9	—0·2	—1·4	—1·3
Mean dy. Rainfall	+0·01	a	+0·02	—0·02	+0·03	—0·01	—0·03	+0·03	—0·01
No. of Rainy days	+5	—1	+5	—3	+3	—5	—6	+9	+3

Duration of flowering.

	June.	July.	Aug.	Sep.	Oct.	Nov.
1869	8.....	.....	.....	.....		
1870	4.....	.....	.....	20		
1871	16.....	.....	.....	.....	19	
1872	17.....	.....	.....	.....		
1873	12.....	.....	.....			

52. Ribes sanguineum. *Scarlet Ribes.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Mch	Mch	Feb	Ap	Mch	Feb	Mch
First flower	**15**	**1**	**29**	**13**	**24**	**10**	**25**	**27**	**25**
Mean Temperature of previous 6 weeks	39·6	37·8	37·5	42·1	42·4	39·3	43·4	42·8	37·6
Mean daily rainfall of ditto	0·02	0·06	0·10	0·08	0·11	0·06	0·05	0·13	0·09
No. of Rainy days in ditto...	13	23	27	23	23	15	16	33	24

Average date for 9 years	Mch.23	Earliest flowering	...Feb.24/69
Mean Temp. of previous 6 weeks for 9 yrs.	38·9	Latest flowering	...Ap. 15/65
Mean daily Rainfall ditto ditto	0·07 in.	Difference ...	...51 days.
Mean No. of Rainy days ditto ditto	23		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+23**	**+9**	**+6**	**—10**	**—28**	**+18**	**+2**	**—26**	**+2**
Mean Temp.....	+0·7	—1·1	—1·4	+3·2	+3·5	+0·4	+4·5	+3·9	—1·3
Mean dy. Rainfall	—0·05	—0·01	+0·03	+0·01	+0·04	—0·01	—0·02	+0·06	+0·02
No. of Rainy days	—10	a	+4	a	a	—8	—7	+10	+1

Duration of flowering.

	Feb.	Mar.	April	May.
1869	24.....	.....	.....	
1870			10.....	
1871		25.....	.....	
1872	27...	.....		
1873		25.....	.....	11

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53. Saxifraga granulata. *Meadow Saxifrage.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	May	Ap	Ap	Ap	Ap	Ap	May
First flower	**30**	**25**	**4**	**25**	**20**	**27**	**24**	**18**	**1**
Mean Temperature of previous 6 weeks	45·8	44·3	46·5	43·3	41·8	43 0	44·8	43·2	44·1
Mean daily Rainfall of ditto	0·04	0·08	0·08	0·07	0·06	0·01	0·08	0·06	0·04
No. of Rainy days in ditto...	13	26	27	18	20	3	14	14	19

Average date for 9 years	Ap. 26
Mean Temp. of previous 6 weeks for 9 yrs.	43·8
Mean daily Rainfall ditto ditto	0·06in
Mean No. of Rainy days ditto ditto	18
Earliest flowering...	Ap. 18/72
Latest flowering ...	May 4/67
Difference	16 days

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+4**	**—1**	**+8**	**—1**	**—6**	**+1**	**—2**	**—8**	**+5**
Mean Temp.....	+2·0	+0·5	+2·7	—0·5	—2·2	—0·8	+1·0	—0·6	+0·3
Mean dy. Rainfall	—0·02	+0·02	+0·02	+0·01	a	—0·05	+0·02	a	—0·02
No. of Rainy days	—5	+8	+9	a	+2	—15	—4	—4	+1

Duration of flowering.

	Mar.	April.	May.	June.	July.
1869		20.....	.....		
1870		27...	.....	14	
1871		24.....	.....	1	
1872		18.....	.....	15	
1873			1.....	16	

54. Sanicula europæa. *Wood Sanicle.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	Ap	May	May	May	May
First flower	**3**	**7**	**15**	**19**	**29**	**18**	**4**	**3**	**5**
Mean Temperature of previous 6 weeks	47·1	45·6	49·0	49·0	45·1	46·9	46·3	45·0	44·7
Mean daily Rainfall of ditto	0·04	0·07	0·09	0·08	0·05	0·06	0·09	0·09	0·05
No. of Rainy days in ditto...	15	25	25	16	18	9	17	19	19

Average date for 9 years...	May 8
Mean Temp. of previous 6 wks. for 9 yrs.	46·4
Mean daily Rainfall ditto ditto	0·06 in.
Mean No. of Rainy days ditto ditto	18
Earliest flowering...	Ap. 29/69
Latest flowering ...	May 19/68
Difference	20 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—5**	**—1**	**+7**	**+11**	**—9**	**+10**	**—4**	**—5**	**—3**
Mean Temp.....	+0·7	+0·8	+2·6	+2·6	—1·3	+0·5	—0·1	—1·4	—1·7
Mean dy. Rainfall	—0·02	+0·01	+0·03	+0·02	—0·01	a	+0·03	+0·03	—0·01
No. of Rainy days	—3	+7	+7	—2	a	—9	—1	+1	+1

Duration of flowering.

	April.	May.	June.	July.	Aug.
1869	29	.....			
1870		18.....	.....	...7	
1871		4.....			
1872		3.....	21		
1873		5.....	.....	19	

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55. Bunium flexuosum. *Pig-nut.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	May	May	May	May	May
First flower	**12**	**22**	**23**	**15**	**1**	**18**	**7**	**9**	**13**
Mean Temperature of previous 6 weeks	50·4	47·3	48·7	47·8	45·3	46.9	46·3	46·3	45·1
Mean daily Rainfall of ditto	0·07	0·07	0·09	0·07	0·04	0·06	0·09	0·08	0·05
No. of Rainy days in ditto...	19	19	23	16	16	9	17	22	19

Average date for 9 years... ... ... May 13
Mean Temp. of previous 6 wks. for 9 yrs. 47·1
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...May 1/69
Latest flowering ...May23/67
Difference ... ...22 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—1**	**+9**	**+10**	**+2**	**—12**	**+5**	**—6**	**—4**	**a**
Mean Temp.....	+3·3	+0·2	+1·6	+0·7	—1·8	—0·2	—0·8	—0·8	—2·0
Mean dy. Rainfall	a	a	+0·02	a	—0·03	—0·01	+0·02	+0·01	—0·02
No. of Rainy days	a	a	+4	—3	—3	—10	—2	+3	a

Duration of flowering.

	May.	June	July	Aug.
1869	1.....	2		
1870	18.....	28		
1871	7.....			
1872	9.....	16		
1873	13.....	.....	17	

56. Heracleum Sphondylium. *Hog-weed.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun	May	May	Ap	May	May	Ap	May
First flower	**3**	**4**	**11**	**3**	**20**	**16**	**5**	**23**	**1**
Mean Temperature of previous 6 weeks	47·1	49 0	48·9	44·7	41·6	46·4	46·2	42·9	44·1
Mean daily Rainfall of ditto	0·04	0·08	00·8	0·07	0·06	0 06	0·09	0·08	0·04
No. of Rainy days in ditto...	15	17	23	15	20	9	17	18	19

Average date for 9 years ... ... May 6
Mean Temp. of previous 6 weeks for 9 yrs. 45·9
Mean daily Rainfall ditto ditto 0 06 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering April 20/69
Latest flowering ...June 4/66
Difference ... ...46 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—3**	**+29**	**+5**	**—3**	**—17**	**+10**	**—1**	**—14**	**—5**
Mean Temp.....	+1·2	+3·1	+3·0	—1·2	—4·3	+0·5	+0·3	—3·0	—1·8
Mean dy. Rainfall	—0·02	+0·02	+0·02	+0·01	a	a	+0·03	+0·02	—0·02
No. of Rainy days	—3	—1	+5	—3	+2	—9	—1	a	+1

Duration of flowering.

	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	20...	.....	.....	.....	.....	.....	.....	...8	
1870		16...	.....	.....	.....	.....	.....	...13	
1871		5.....	.....	.....	.....	.....	.....	26	
1872	28	.....	.....	.....	.....	.....	.....	.....	...9
1873		1.....	.....	.....	.....				

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57. Anthriscus sylvestris. *Cow-Chervil.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Ap	Mch	Ap	Mch	Mch	Mch	Mch
First flower	**21**	**13**	**13**	**30**	**3**	**21**	**30**	**16**	**26**
Mean Temperature of previous 6 weeks	42·1	40·5	38·7	42·5	37·6	36·1	43·6	44·5	37·8
Mean daily Rainfall of ditto	0·04	0·09	0·10	0·07	0·05	0·06	0·04	0·06	0·09
No. of Rainy days in ditto...	15	25	29	24	22	19	13	25	24

Average date for 9 years ... ... Ap. 2
Mean Temp. of previous 6 wks. for 9 yrs. 39·6
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 21

Earliest flowering...Mar.16/72
Latest flowering ...Ap. 21/65
Difference ... ...36 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+19**	**+11**	**+11**	**—3**	**+1**	**—12**	**—3**	**—17**	**—7**
Mean Temp.....	+2·5	+0·9	—0·9	+2·9	—2·0	—3·5	+4·0	+4·9	—1·8
Mean dy. Rainfall	—0 03	+0·02	+0·03	a	—0·02	—0·01	—0·03	—0·01	+0·02
No. of Rainy days	—6	+4	+8	+3	+1	—2	—8	+4	+3

Duration of flowering.

	March.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.
1869		3.....	.....	2		27	.....	.....	21	
1870	21...	.....	.....	.....	2				3	
1871	30	.....	.....	1		21...	.....	.....	...12	
1872	16.....	.....	.....	21			17	.....	.....	...11
1873	26...	.....	.....	.....	...8					

58. Cornus sanguinea. *Dog-wood.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Jun	Jun	Jun	May	May	Jun	May	Jun	Jun
First flower	**4**	**19**	**16**	**27**	**31**	**5**	**26**	**18**	**13**
Mean Temperature of previous 6 weeks	52·7	52·3	51·7	51·9	48·8	50·1	48·8	49·8	49·6
Mean daily Rainfall of ditto	0·08	0·08	0·09	0·10	0·10	0·06	0·09	0·10	0·06
No. of Rainy days in ditto...	21	17	23	18	20	11	17	25	20

Average date for 9 years... ... ... June 7
Mean Temp. of previous 6 wks. for 9 yrs. 50·3
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 17

Earliest flowering...May 26/71
Latest flowering ...June19/66
Difference ... ...24 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—3**	**+12**	**+9**	**—11**	**—7**	**—2**	**—12**	**+11**	**+6**
Mean Temp.....	+2·4	+2·0	+1·4	+1·6	—1·5	—0·2	—1·5	—0·5	—0·7
Mean dy. Rainfall	+0·01	+0·01	+0·02	+0·03	+0·03	—0·01	+0·02	+0·03	—0·01
No. of Rainy days	+4	a	+6	+1	+3	—6	a	+8	+3

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	31.....							
1870		5.....	.....	.....	.....	...3		
1871	26.....							
1872		18...	.....					
1873		13.....	.....					

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59. Adoxa Moschatellina. *Moschatel.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	Ap 1	Mch 30	Mch 9	Feb 27	Feb 20	Mch 21	Mch 18	Feb 21	Mch 9
Mean Temperature of previous 6 weeks	36·3	37·4	41·7	40·8	42·8	36·1	42·8	42·2	35·4
Mean daily Rainfall of ditto	0·05	0·06	0·09	0·12	0·10	0·06	0·06	0·14	0·07
No. of Rainy days in ditto...	19	21	30	18	22	19	22	34	21

Average date for 9 years ... ... Mch 11
Mean Temp. of previous 6 wks. for 9 yrs. 39·6
Mean daily Rainfall ditto ditto 0·08 in.
Mean no. of Rainy days ditto ditto 25

Earliest flowering...Feb.20/69
Latest flowering ...Ap. 1/65
Difference ... ...41 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+21	+19	—2	—14	—20	+10	+7	—20	—2
Mean Temp.....	—3·3	—2·2	+2·1	+1·2	+3·2	—3·5	+3·2	+2·6	—4·2
Mean dy. Rainfall	—0·03	—0·02	+0·01	+0·04	+0·02	—0·02	—0·02	+0·06	—0·01
No. of Rainy days	—6	—4	+5	—7	—3	—6	—3	+9	—4

Duration of flowering.

	Jan.	Feb.	Mar.	April.	May.	June.
1869		20...	.....	.....	2	
1870			21...	.....	15	
1871			18.....	.....	...12	
1872		21...	.....	.....	...9	
1873			9.....	.....	25	

60. Sambucus nigra. *Elder.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	May 8	Jun 2	May 23	May 14	May 3	May 23	May 26	Jun 1	Jun 6
Mean Temperature of previous 6 weeks	49·4	48 3	48·7	47·6	45·7	48·5	48·8	47·4	48·3
Mean daily Rainfall of ditto	0·05	0 07	0·09	0·07	0·06	0·05	0·09	0·10	0·06
No. of Rainy days in ditto...	17	15	23	16	16	8	17	27	20

Average date for 9 years ... ... May 22
Mean Temp. of previous 6 weeks for 9 yrs. 48·4
Mean daily Rainfall ditto ditto 0 08in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering...May 3/69
Latest flowering ...June 6/73
Difference ... ...34 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	—14	+11	+1	—8	—19	+1	+4	+10	+15
Mean Temp.	+1·0	—0·1	+0·3	—0·8	—2·7	+0·1	+0·4	—1·0	—0·1
Mean dy. Rainfall	—0·03	—0·01	+0·01	—0·01	—0·02	—0·03	+0·01	+0·02	—0·02
No. of Rainy days	—2	—4	+4	—3	—3	—11	—2	+8	+1

Duration of flowering.

	May.	June.	July.	Aug.	Sep.	Oct.	Nov.
1869	3.....	.....	.....	.....	28		
1870	23...	.....	.....				
1871	26...	.....	.....	.....	29		
1872		1.....	.....	.....			
1873		6.....	.....				

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61. Viburnum lantana. *Wayfaring Tree.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	May	May	Ap	Ap	May	Ap	Ap	May
First flower	**29**	**5**	**4**	**20**	**19**	**12**	**27**	**16**	**5**
Mean Temperature of previous 6 weeks	45·6	45·4	46·5	42·7	41·3	45·3	45·7	43·4	44·7
Mean daily Rainfall of ditto	0·04	0·07	0·08	0·06	0·06	0·03	0·07	0·06	0·05
No. of Rainy days in ditto.	13	26	27	17	20	6	14	15	19

Average date for 9 years	Ap. 29
Mean Temp. of previous 6 weeks for 9 yrs.	44·5
Mean daily Rainfall ditto ditto	0·07 in.
Mean No. of Rainy days ditto ditto	18

Earliest flowering ..	Ap. 16/72
Latest flowering ...	May 12/70
Difference	26 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	a	**+6**	**+5**	**—9**	**—10**	**+13**	**—2**	**—13**	**+6**
Mean Temp.....	+1·1	+0·9	+2·0	—1·8	—3·2	+0 8	+1·2	—1·1	+0·2
Mean dy. Rainfall	—0·03	a	+0·01	—0·01	—0·01	—0·04	a	—0·01	—0·02
No. of Rainy days	—5	+8	+9	—1	+2	—12	—4	—3	+1

Duration of flowering.

	April.	May.	June.	July.
1869	19.....	.....		
1870		12.....	.....	...2
1871	27...	.....	...5	
1872	16.....	.....	13	
1873		5.....	16	

62. Sherardia arvensis. *Blue Sherardia.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	May	May	May	Ap	Ap	May	Ap	May
First flower	**30**	**4**	**15**	**2**	**20**	**28**	**9**	**25**	**2**
Mean Temperature of previous 6 weeks	45·8	45·4	49·0	44·4	41·6	42·7	46·6	43·3	44·4
Mean daily Rainfall of ditto	0·04	0·08	0·09	0·07	0·06	0·01	0·09	0·08	0·04
No. of Rainy days in ditto...	13	26	25	16	20	3	18	18	18

Average date for 9 years	May 2
Mean Temp. of previous 6 wks. for 9 yrs.	45·1
Mean daily Rainfall ditto ditto	0·06 in.
Mean no. of Rainy days ditto ditto	18

Earliest flowering...	Ap. 20/69
Latest flowering ...	May 15/67
Difference	25 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—2**	**+2**	**+13**	a	**—12**	**—4**	**+7**	**—7**	a
Mean Temp.....	+0·7	+0·3	+3·9	—0·7	—3·5	—2·4	+1·5	—1·8	—0·7
Mean dy. Rainfall	—0·02	+0·02	+0·03	+0·01	a	—0·05	+0·03	+0·02	—0·02
No. of Rainy days	—5	+8	+7	—2	+2	—15	a	a	a

Duration of flowering.

	April	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1869	20.....	.....	.....	.....	.....	.....	.....	21
1870	28	.....	.....	.....	.....	.....	30	
1871		9.....	.....	.....	.....	.....	.....	...12
1872	25...	.....	.....	.....	.....	.....	23	
1873		2.....	.....	.....	.....	.....		

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63. Galium cruciatum. *Crosswort.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	May	Ap	Ap	Ap	Ap	Ap	Ap
First flower	**24**	**27**	**10**	**19**	**19**	**18**	**29**	**10**	**27**
Mean Temperature of previous 6 weeks	43·4	45·1	48·6	42·5	41·3	40 5	46·2	43·5	43·1
Mean daily Rainfall of ditto	0·04	0·07	0·08	0 05	0·06	0·03	0·09	0·07	0·04
No. of Rainy days in ditto...	13	26	24	17	20	8	16	18	18

Average date for 9 years... ... ... Ap. 24
Mean Temp. of previous 6 wks. for 9 yrs. 43.3
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering...Ap. 10/72
Latest flowering ...May10/67
Difference ... ...30 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**a**	**+3**	**+16**	**—5**	**—5**	**—6**	**+5**	**—14**	**+3**
Mean Temp. ...	+0·1	+1·8	+5·3	—0·8	—2 0	—2·8	+2·9	+0·2	—0·2
Mean dy. Rainfall	—0 03	a	+0·01	—0 02	—0·01	—0·04	+0·02	a	—0·03
No. of Rainy days	—5	+8	+6	—1	+2	—10	—2	a	a

Duration of flowering.

	April	May	June	July
1869	19.....	.....		
1870	18.....	.....	14	
1871	29...	1		
1872	10.....	.....	12	
1873	27...	.....	.....	17

64. Galium Aparine. *Cleavers.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	Ap	Ap	May	May	May
First flower	**3**	**10**	**9**	**9**	**30**	**28**	**6**	**5**	**15**
Mean Temperature of previous 6 weeks	47·1	45·5	48·2	46·0	45·2	42·7	46·3	45·7	45·2
Mean daily Rainfall of ditto	0·04	0·08	0·07	0·07	0·04	0·01	0·09	0·09	0·05
No. of Rainy days in ditto...	15	27	24	14	17	3	17	20	19

Average date for 9 years ... ... May 6
Mean Temp. of previous 6 weeks for 9 yrs. 45·9
Mean daily Rainfall ditto ditto 0·06 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering...Ap. 28/70
Latest flowering ...May17/73
Difference ... ...17 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—3**	**+4**	**+3**	**+3**	**—6**	**—8**	**a**	**—1**	**+9**
Mean Temp. ...	+1·2	—0·4	+2·3	+0·1	—0·7	—3·2	+0·4	—0·2	—0·7
Mean dy. Rainfall	—0·02	+0·02	+0·01	+0·01	—0·02	—0·05	+0·03	+0·03	—0·01
No. of Rainy days	—3	+9	+6	—4	—1	—15	—1	+2	+1

Duration of flowering.

	Ap	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	30	.....	.....	.....	.....	.....	.....	.....	...
1870	28	.....	.....	.....	.....	.....	18		
1871		6.....	.....	.....	.....	.....	.....	...12	
1872		5.....	.....	.....	.....	.....	.....	.....	...11
1873		15...	.....	.....	.....				

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65. Galium Mollugo. *Hedge Bedstraw.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Jun	Jun	Jun	May	Jun	May	Jun	Jun	Jun
First flower	**14**	**15**	**14**	**31**	**2**	**28**	**21**	**16**	**27**
Mean Temperature of previous 6 weeks	54·6	51·9	52·0	52·7	48·8	49·0	51·3	48·9	53·0
Mean daily Rainfall of ditto	0·08	0 07	0·09	0·08	0·10	0·05	0·08	0·11	0·04
No. of Rainy days in ditto...	18	15	21	16	20	8	14	26	17

Average date for 9 years	Jun12	Earliest flowering...	May28/70
Mean Temp. of previous 6 weeks for 9 yrs.	51·0	Latest flowering ...	June27/73
Mean daily Rainfall ditto ditto	0·07in.	Difference	30 days.
Mean No. of Rainy days ditto ditto	16		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+2**	**+3**	**+2**	**—12**	**—10**	**—15**	**+9**	**+4**	**+15**
Mean Temp.	+3.6	+0·9	+1·0	+1·7	—2·2	—2·0	+0·3	—2·1	+2·0
Mean dy.Rainfall	—0·01	a	+0·02	+0·01	+0·03	—0·02	+0·01	+0·04	—0·03
No. of Rainy days	+2	—1	+5	a	+4	—8	—2	+10	+1

Duration of flowering.

	May.	June.	July.	Aug.	Sep.	Oct.	Nov.
1869		2.....	.....	.....	.....	10	
1870	28	.....	.....	.....	.....	30	
1871		21...	.....	.....	.....	.....	16
1872		16.....	.....	.....	.....		
1873		27	.....	.....			

66. Valeriana dioica. *Marsh Valerian.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	Ap	May	Ap	Ap	Ap
First flower	**10**	**3**	**8**	**2**	**30**	**12**	**25**	**20**	**27**
Mean Temperature of previous 6 weeks	50.1	45·4	47·9	44·4	45·2	45·3	45·0	42·8	43·1
Mean daily Rainfall of ditto	0·06	0·09	0·07	0·07	0·04	0·03	0·08	0·07	0·04
No. of Rainy days in ditto...	17	27	23	16	17	6	13	16	18

Average date for 9 years...	May. 2	Earliest flowering...	Ap. 20/72
Mean Temp. of previous 6 wks. for 9 yrs.	45·1	Latest flowering ...	May12/70
Mean daily Rainfall ditto ditto	0·06 in.	Difference	22 days.
Mean no. of Rainy days ditto ditto	18		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+8**	**+1**	**+6**	**a**	**—2**	**+10**	**—7**	**—12**	**—5**
Mean Temp. ...	+5·0	+0·3	+2·8	—0·7	+0·1	+0·2	—0·1	—2·3	—2·0
Mean dy. Rainfall	a	+0·03	+0·01	+0·01	—0·02	—0·03	+0·02	+0·01	—0·02
No. of Rainy days	—1	+9	+5	—2	—1	—12	—5	—2	a

Duration of flowering.

	April	May	June	July
1869	30	.....		
1870		12.....	13	
1871	25...	26		
1872	20.....	.....	13	
1873	27...	.....	13	

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67. Petasites vulgaris. *Butter-bur.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Mch	Feb	Feb	Feb	Mch	Mch	Feb	Feb
First flower	**10**	**9**	**25**	**28**	**25**	**10**	**10**	**26**	**26**
Mean Temperature of previous 6 weeks	38·5	37·9	40·9	40·8	42·3	35·8	41·1	42·7	34·5
Mean daily rainfall of ditto	0·03	0·11	0·10	0·11	0·11	0·09	0·06	0·14	0·08
No. of Rainy days in ditto...	15	27	28	18	23	21	22	34	19

Average date for 9 years	Mch. 7	Earliest flowering	Feb. 25/67-69
Mean Temp. of previous 6 weeks for 9 yrs.	39·4	Latest flowering	...Ap. 10/65
Mean daily Rainfall ditto ditto	0·09 in.	Difference ...	...44 days.
Mean No. of Rainy days ditto ditto	24		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+34**	**+2**	**—10**	**—7**	**—10**	**+3**	**+3**	**—9**	**—9**
Mean Temp.....	—0·9	—1·5	+1·5	+1·4	+2·9	—3·6	+1·7	+3·3	—4·9
Mean dy. Rainfall	—0·06	+0·02	+0·01	+0·02	+0·02	+0·01	—0·03	+0·05	—0·01
No. of Rainy days	—9	+3	+4	—6	—1	—3	—2	+10	—5

Duration of flowering.

	Feb.	Mar.	April	May.
1869	25...	.....	.....	7
1870		10.....	.....	14
1871		10.....	25	
1872	26...	.....	12	
1873	26...	.....	.....	25

68. Tussilago Farfara. *Colt's Foot.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Feb	Feb	Feb	Feb	Mch	Mch	Feb	Mch
First flower	**1**	**23**	**11**	**21**	**14**	**9**	**4**	**13**	**11**
Mean Temperature of previous 6 weeks	36·3	41·3	35·6	40·3	43·0	35·5	39·2	41·6	35·6
Mean daily Rainfall of ditto	0·05	0·14	0·14	0·15	0·12	0·09	0·04	0·18	0·07
No. of Rainy days in ditto...	19	29	28	22	22	20	19	35	23

Average date for 9 years	Feb. 28	Earliest flowering	Feb. 11/67
Mean Temp. of previous 6 weeks for 9 yrs.	38·6	Latest flowering	...Ap. 1 /65
Mean daily Rainfall ditto ditto	0·09 in.	Difference ...	...49 days.
Mean No. of Rainy days ditto ditto	24		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+32**	**—5**	**—17**	**—7**	**—14**	**+9**	**+4**	**—15**	**+11**
Mean Temp.....	—2 3	+2·7	—3·0	+1·7	+4·4	—3·1	+0·6	+3·0	—3·0
Mean dy. Rainfall	—0·04	+0·05	+0·05	+0·06	+0·03	a	—0·05	+0·09	—0·02
No. of Rainy days	—5	+5	+4	—2	—2	—4	—5	+11	—1

Duration of flowering.

	Feb.	Mar.	April.	May.
1869	14.....	.....	.....	12
1870		9.....	.....	28
1871		4.....	.....	17
1872	18.....	.....	.....	30
1873		11.....	.....	13

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69. Achillea Millefolium. *Milfoil.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun	Jun	May	Jun	May	May	May	May
First flower	**23**	**21**	**14**	**31**	**4**	**21**	**26**	**24**	**28**
Mean Temperature of previous 6 weeks	51·6	52·6	52·0	52·7	48·9	48 0	48·8	45·6	46·4
Mean daily Rainfall of ditto	0·08	0·07	0·09	0·08	0·10	0·05	0·09	0·09	0·06
No. of Rainy days in ditto...	21	17	21	16	19	8	17	27	20

Average date for 9 years ... ... June 1
Mean Temp. of previous 6 wks. for 9 yrs. 49·4
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18 .

Earliest flowering ...May21/70
Latest flowering ...June 21/66
Difference ... ...31 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—9**	**+20**	**+13**	**—1**	**+3**	**—11**	**—6**	**—8**	**—4**
Mean Temp.....	+2·2	+3·2	+2·6	+3·3	—0·5	—1·4	—0·6	—3·8	—3·0
Mean dy. Rainfall	+0·01	a	+0·02	+0·01	+0·03	—0·02	+0·02	+0·02	—0·01
No. of Rainy days	+3	—1	+3	—2	+1	—10	—1	+9	+2

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869		4.....	.....	.....	.....	.....	.....	.....
1870	21.....	.....	.....	.....	.....	.....	.....	...8
1871	26...	.....	.....	.....	.....	.....	...26	
1872	24.....	.....	.....	.....	.....	.....	.....	...11
1873	28	.....	.....	.....				

70. Chrysanthemum Leucanthemum. *Ox-eye.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	May	May	May	May	May
First flower	**12**	**20**	**16**	**16**	**22**	**16**	**19**	**9**	**13**
Mean Temperature of previous 6 weeks	50·4	46·8	48·8	48·1	49·3	46·4	47·3	46·3	45·1
Mean daily Rainfall of ditto	0·07	0·07	0·09	0·07	0·10	0·06	0·09	0·08	0·05
No. of Rainy days in ditto...	19	21	24	16	21	9	18	22	19

Average date for 9 years May.16
Mean Temp. of previous 6 weeks for 9 yrs. 47·5
Mean daily Rainfall ditto ditto 0·07in
Mean No. of Rainy days ditto ditto 9

Earliest flowering...May 9/72
Latest flowering ...May22/69
Difference ... ...13 days

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—4**	**+4**	+a	—a	**+6**	a	**+3**	**—7**	**—3**
Mean Temp.....	+2·9	—0·7	+1·3	+0·6	+1·8	—1·1	—0·2	—1·2	—2·4
Mean dy. Rainfall	a	a	+0·02	a	+0·03	—0·01	+0·02	+0·01	—0·02
No. of Rainy days	a	+2	+5	—3	+2	—10	—1	+3	a

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	22	.....	.....	.....	.....	...9		
1870	16.....	.....	.....	.....	.....	...2		
1871	19.....	.....	.....	.....	.....	.....	16	
1872	9	.....	.....	.....	.....			
1873	18.....	....	.....	.....				

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71. Carduus crispus. *Welted Thistle.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	May	May	May	May	May
First flower	**20**	**21**	**26**	**19**	**2**	**15**	**17**	**20**	**25**
Mean Temperature of previous 6 weeks	51·1	47·1	48·7	49·0	45·5	46·0	46·9	45·9	46·5
Mean daily Rainfall of ditto	0·07	0·07	0·09	0·08	0·04	0·06	0·09	0·09	0·05
No. of Rainy days in ditto...	21	20	22	16	15	9	17	25	20

Average date for 9 years...	May 18	Earliest flowering...	May 2 /69
Mean Temp. of previous 6 wks. for 9 yrs.	47·7	Latest flowering ...	May 26/67
Mean daily Rainfall ditto ditto	0·08 in.	Difference	24 days.
Mean No. of Rainy days ditto ditto	19		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+2**	**+3**	**+8**	**+1**	**—16**	**—3**	**—1**	**+2**	**+7**
Mean Temp.....	+3·4	—0·6	+1·0	+1·3	—2·2	—1·7	—0·8	—1·8	—1·2
Mean dy. Rainfall	—0·01	—0·01	+0·01	a	—0·04	—0·02	+0·01	+0·01	—0·03
No. of Rainy days	+2	+1	+3	—3	—4	—10	—2	+6	+1

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	2.....	.....	.....	.....	.....	.....	21	
1870	15.....	.....	.....	.....	.....	.....	18	
1871	17.....	.....	.....	.....	.....	.....	...12	
1872	20...	.....	.....	.....	.....	.....	.....	...11
1873	25	.....	.....	.....				

72. Carduus palustris. *Marsh Thistle.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	June	June	May	May	May	May	May	June
First flower	**30**	**13**	**8**	**23**	**27**	**22**	**26**	**24**	**2**
Mean Temperature of previous 6 weeks	52·3	51·2	50·7	50·5	48·7	48.4	48·8	45·6	46·7
Mean daily Rainfall of ditto	0·06	0·07	0·09	0·09	0·10	0·05	0·09	0·09	0·06
No. of Rainy days in ditto...	19	15	20	18	21	8	17	27	20

Average date for 9 years...	May 30	Earliest flowering...	May22/70
Mean Temp. of previous 6 wks. for 9 yrs.	49·1	Latest flowering ...	June13/66
Mean daily Rainfall ditto ditto	0·07 in.	Difference	22 days.
Mean no. of Rainy days ditto ditto	18		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**a**	**+14**	**+9**	**—7**	**—3**	**—8**	**—4**	**—6**	**+3**
Mean Temp.....	+3·2	+2·1	+1·6	+1·4	—0·4	—0·7	—0·3	—3·5	—2·4
Mean dy. Rainfall	—0.01	a	+0·02	+0·02	+0·03	—0·02	+0·02	+0·02	—0·01
No. of Rainy days	+1	—3	+2	a	+3	—10	—1	+9	+2

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.
1869	27...	.....	.....	.....	.....	19
1870	22.....	.....	.....	.....	.....	...3
1871	26...	.....	.....	.....	.....	24
1872	24.....	.....	.....	.....	.....	
1873		2.....	.....	.....		

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73. Lapsana communis. *Nipplewort.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Jun	Jun	Jun	Jun	Jun	Jun	Jun	Jun	Jun
First flower	**15**	**28**	**24**	**19**	**4**	**11**	**25**	**22**	**22**
Mean Temperature of previous 6 weeks	54·9	55·2	51·5	55·6	48·9	51·7	52·1	51·3	52·0
Mean daily Rainfall of ditto	0·07	0·07	0·08	0·04	0·10	0·05	0·09	0·09	0·04
No. of Rainy days in ditto...	17	16	20	9	19	10	15	24	16

Average date for 9 years ... ... June 19
Mean Temp. of previous 6 wks. for 9 yrs. 52·4
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 16

Earliest flowering...Jun. 4/69
Latest flowering ...Jun. 28/66
Difference ... ...24 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—4**	**+9**	**+5**	**a**	**—15**	**—8**	**+6**	**+3**	**+3**
Mean Temp.....	+2·5	+2·8	—0·9	+3·2	—3·5	—0·7	—0·3	—1·1	—0·4
Mean dy. Rainfall	**a**	**a**	+0·01	—0·03	+0·03	—0·02	+0·02	+0·02	—0·03
No. of Rainy days	+1	**a**	+4	—7	+3	—6	—1	+8	**a**

Duration of flowering.

	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.
1869	4.....	.....	.....	.....	.....	16	
1870	11...	.....	.....	.....	18		
1871	25...	.....	.....	.....	.....	16	
1872	22...	.....	.....	.....	.....	.....	1
1873	22...	.....	.....				

74. Apargia hispida. *Rough Hawk-bit.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	Jun	May	May	May	May	May	Jun
First flower	**28**	**29**	**2**	**19**	**17**	**18**	**12**	**20**	**10**
Mean Temperature of previous 6 weeks	52·3	47·6	50·0	49·0	49·5	46·9	46·9	45·9	49·3
Mean daily Rainfall of ditto	0·07	0·06	0·09	0·08	0·09	0·06	0·09	0·09	0·05
No. of Rainy days in ditto...	20	15	21	16	19	9	18	25	18

Average date for 9 years ... ... May 24
Mean Temp. of previous 6 wks. for 9 yrs. 48·5
Mean daily Rainfall ditto ditto 0·08 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...May12/71
Latest flowering ...Jun10/73
Difference ... ...29 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+4**	**+5**	**+9**	**—5**	**—7**	**—6**	**—12**	**—4**	**+17**
Mean Temp.....	+3·8	—0·9	+1·5	+0·5	+1·0	—1·6	—1·6	—2·6	+0·8
Mean dy. Rainfall	—0·01	—0·02	+0·01	**a**	+0·01	—0·02	+0·01	+0·01	—0·03
No. of Rainy days	+1	—4	+2	—3	**a**	—10	—1	+6	—1

Duration of flowering.

	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.
1869	17...	.....	.....	.....	.....	...9		
1870	18...	.....	.....	.....	.....	...9		
1871	12.....	.....	.....	.....	.....	.....	1	
1872	20...	.....	.....	.....	.....	.....	.....	2
1873		10.....	.....	.....				

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75. Crepis Virens. *Smooth Hawk's-beard.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun	Jun.	May	May	May	May	May	Jun.
First flower	**23**	**8**	**7**	**14**	**5**	**12**	**26**	**12**	**2**
Mean Temperature of previous 6 weeks	51·6	49·3	50·6	47·6	46·2	45·3	48·8	45 6	46·7
Mean daily Rainfall of ditto	0·08	0·08	00·9	0·07	0·07	0·03	0·09	0·08	0·0$_6$
No. of Rainy days in ditto...	21	16	21	16	18	6	17	22	20

Average date for 9 years	May 22	Earliest flowering	May 5/69
Mean Temp. of previous 6 weeks for 9 yrs.	48·4	Latest flowering	...June 8/66
Mean daily Rainfall ditto ditto	0 08 in.	Difference ...	...34 days.
Mean No. of Rainy days ditto ditto	19		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+1**	**+17**	**+16**	**—8**	**—17**	**—10**	**+4**	**—10**	**+11**
Mean Temp.....	+3·2	+0·9	+2·2	—0·8	—2·2	—3·1	+0·4	—2·8	—1·7
Mean dy.Rainfall	a	a	+0·01	—0·01	—0·01	—0·05	+0·01	a	—0·02
No. of Rainy days	+2	—3	+2	—3	—1	—13	—2	+3	+1

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	5.....	.....	.....	.....	.....	.....	.....	15
1870	12.....	.....	.....	.....	.....	.....	.....	...8
1871	26	.....	.....	.....	.....	.....	26	
1872	12.....	.....	.....	.....	.....	.....	.....	12
1873		2.....	.....	.....				

76. Hieracium Pilosella. *Mouse-ear Hawk-weed.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	Jun.	May	May	May	May	May	May
First flower	**21**	**22**	**8**	**16**	**6**	**16**	**12**	**5**	**13**
Mean Temperature of previous 6 weeks	51·3	47·3	50·7	48·1	46·5	46·4	46·9	44·7	45·1
Mean daily Rainfall of ditto	0·08	0·07	0·09	0 07	0·08	0·06	0·09	0·09	0·05
No. of Rainy days in ditto...	22	19	20	16	19	9	18	20	19

Average date for 9 years...	May 17	Earliest flowering ...	May 5/72
Mean Temp. of previous 6 wks. for 9 yrs.	47·7	Latest flowering	...June 8/67
Mean daily Rainfall ditto ditto	0·08 in.	Difference ...	...34 days.
Mean no. of Rainy days ditto ditto	19		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+4**	**+5**	**+22**	**—1**	**—11**	**—1**	**—5**	**—12**	**—4**
Mean Temp.....	+3·6	—0·4	+3·0	+0·4	—1·2	—1·3	—0·8	—3·0	—2·6
Mean dy. Rainfall	a	—0·01	+0·01	—0·01	a	—0·02	+0·01	+0·01	+0·03
No. of Rainy days	+3	a	+1	—3	a	—10	—1	+1	a

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1869	6.....	.....	.....	.....	.....	...9	
1870	16.....	.....	.....	.....	.....	18	
1871	12.....	.....	.....	.....	.....	.....	12
1872	5.....	.....	.....	.....	.....		
1873	13.....	.....	.....				

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77. Ilex Aquifolium. *Holly.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	May	May	May	May	May
First flower	**11**	?**14**	**11**	**13**	**12**	**18**	**12**	**24**	**17**
Mean Temperature of previous 6 weeks	50·2	45·8	48·9	47 2	48·5	46·9	46·9	45·6	45·2
Mean daily Rainfall of ditto	0·07	0·08	0·08	0·07	0·09	0·06	0·09	0·09	0·05
No. of Rainy days in ditto	18	25	23	16	20	9	18	27	19

Average date for 9 years ... ... May 15
Mean Temp. of previous 6 weeks for 9 yrs. 47·4
Mean daily Rainfall ditto ditto 0·08 in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering May 11/65:67
Latest flowering ... May 24/72
Difference ... ...13 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—4**	**—1**	**—4**	**—2**	**—3**	**+3**	**—3**	**+9**	**+2**
Mean Temp. ...	+2·8	—1·6	+1·5	—0·2	+1·1	—0·5	—0·5	—1·8	—2·2
Mean dy. Rainfall	—0·01	a	a	—0·01	+0·01	—0·02	+0·01	+0·01	—0·03
No. of Rainy days	—1	+6	+4	—3	+1	—10	—1	+8	a

Duration of flowering.

	May.	June.	July.	Aug.
1869	12.....	.....		
1870	18...	14		
1871	12...26...	.....		
1872	24...	13		
1873	17.....	24		

78. Convolvulus arvensis. *Field Bindweed.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun		May	Jun	Jun	Jun	Jun	Jun
First flower	**28**	**14**		**31**	**12**	**3**	**7**	**15**	**21**
Mean Temperature of previous 6 weeks	52·3	51·5		52·7	49·7	49·5	49·4	48·6	51·8
Mean daily Rainfall of ditto	0·07	0·07		0·08	0·10	0·06	0·05	0·11	0·04
No. of Rainy days in ditto	20	14		16	19	11	10	26	17

Average date for 8 years ... ... Jun 9
Mean Temp. of previous 6 wks. for 9 yrs. 50·5
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 17

Earliest flowering ... May 28/65
Latest flowering ... Jun 21/73
Difference ... ...24 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—12**	**+5**		**—9**	**+3**	**—6**	**—2**	**+6**	**+12**
Mean Temp.....	+1·8	+1·0		+2·2	—0·8	—1.0	—1·1	—1·9	+1·3
Mean dy. Rainfall	a	a		+0·01	+0·03	—0·01	—0·02	+0·04	—0·03
No. of Rainy days	+3	—3		—1	+2	—6	—7	+9	a

Duration of flowering.

	June.	July.	Aug.	Sep.	Oct..
1869	12.....	.....	.....	.....	...5
1870	3.....	.....	.....	.....	...2
1871	7.....	.....	.....	.....	...3
1872	15.....	.....	.....	.....	
1873	21.....	.....	.....		

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79. Cynoglossum officinale. *Hound's-tongue.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun	May	May	May	May	May	May	Jun
First flower	**13**	**6**	**29**	**19**	**17**	**24**	**26**	**20**	**7**
Mean Temperature of previous 6 weeks	50·5	49·2	49·2	49 0	49·5	48·7	48·8	45·9	48·6
Mean daily Rainfall of ditto	0·07	0·08	0·10	0·08	0·09	0·05	0 09	0 09	0·05
No. of Rainy days in ditto	20	18	23	16	19	8	17	25	19

Average date for 9 years ... ... May 25
Mean Temp. of previous 6 weeks for 9 yrs. 48·6
Mean daily Rainfall ditto ditto 0·08 in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering...May 13/65
Latest flowering ... Jun 7/73
Difference ... ...25 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—12**	**+12**	**+4**	**—6**	**—8**	**—1**	**+1**	**—5**	**+13**
Mean Temp.....	+1·9	+0·6	+0·6	+0·4	+0·9	+0·1	+0·2	—2·7	a
Mean dy. Rainfall	—0·01	a	+0·02	a	+0·01	—0·03	+0·01	+0·01	—0·03
No. of Rainy days	+1	—1	+4	—8	a	—11	—2	+6	a

Duration of flowering.

	May.	June	July	Aug.
1869	17.....	...2		
1870	24.....	11		
1871	26...	.....		
1872	20.....	16		
1873		7.....	19	

80. Symphytum officinale. *Comfrey.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Ap	Ap	Ap	Ap	Ap	Ap	Ap
First flower	**30**	**28**	**29**	**22**	**16**	**21**	**23**	**24**	**20**
Mean Temperature of previous 6 weeks	45·8	45·4	44·5	43·1	40·8	41·5	44·8	43·1	42·5
Mean daily Rainfall of ditto	0·04	0·09	0·11	0·06	0·06	0·03	0·08	0·08	0·06
No. of Rainy days in ditto...	13	26	30	17	19	7	15	18	21

Average date for 9 years... ... ... April 24
Mean Temp. of previous 6 wks. for 9 yrs. 43·3
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering... Ap 16/69
Latest flowering ... Ap 30/65
Difference ... ...14 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+6**	**+4**	**+5**	**—2**	**—8**	**—3**	**—1**	**a**	**—4**
Mean Temp.....	+2·5	+2·1	+1·2	—0·2	—2·5	—1·8	+1·5	—0·2	—0·8
Mean dy. Rainfall	—0·03	+0·02	+0·04	—0·01	—0·01	—0·04	+0·01	+0·01	—0·01
No. of Rainy days	—5	+8	+12	—1	+1	—11	—3	a	+3

Duration of flowering.

	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1869	16.....	.....	.....	.....	.....	.....	.....	...2
1870	21.....	.....	.....	.....	.....	.....	...2	
1871	23...	.....	.....	.....	.....	.....	5	
1872	24...	.....	.....	.....	.....	...		
1873	20.....	.....	.....	.....	.....			

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81. Lithospermum arvense. *Corn Gromwell.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	May	Ap	Ap	May	Ap	Ap	May
First flower	**29**	**23**	**9**	**29**	**22**	**20**	**6**	**12**	**4**
Mean Temperature of previous 6 weeks	45·6	43·5	48·2	43·7	42·3	47·5	43·7	43·6	44·6
Mean daily Rainfall of ditto	0·04	0·08	0·07	0·07	0·06	0·06	0·04	0·06	0·05
No. of Rainy days in ditto...	13	26	24	18	20	9	13	16	18

Average date for 9 years	Ap 27	Earliest flowering...	Ap 6/71
Mean Temp. of previous 6 weeks for 9 yrs.	44.1	Latest flowering ...	May20/70
Mean daily Rainfall ditto ditto	0·06in	Difference	44 days
Mean No. of Rainy days ditto ditto	18		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+2**	**—4**	**+12**	**+2**	**—5**	**+23**	**—21**	**—15**	**+7**
Mean Temp.....	+1·5	—0·6	+4·1	—0·4	—1·8	+3·4	—0·4	—0·5	+0·5
Mean dy. Rainfall	—0·02	+0·02	+0·01	+0·01	a	a	—0·02	a	—0·01
No. of Rainy days	—5	+8	+6	a	+2	—9	—5	—2	a

Duration of flowering.

	Ap.	May.	June.	July.	Aug.	Sept.
1869	22...	.....	.....	.....	.....	
1870		20...	.....	...		
1871	6.....	.....	.....	.....	.....	...2
1872	12.....	.....	.....	.....	.....	
1873		4.....	.....	.....		

82. Myosotis arvensis. *Field Scorpion-grass.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	May	Ap	Ap	Ap	Ap	Ap	Ap
First flower	**30**	**16**	**6**	**4**	**26**	**26**	**25**	**6**	**18**
Mean Temperature of previous 6 weeks	45·8	41·7	47·1	42·7	44·0	43·1	45·0	43·3	42·3
Mean daily Rainfall of ditto	0·04	0·09	0·07	0·07	0·06	0·01	0·08	0·07	0·07
No. of Rainy days in ditto...	13	28	25	20	21	4	13	19	23

Average date for 9 years	Ap 21	Earliest flowering ...	Ap 4/68
Mean Temp. of previous 6 wks. for 9 yrs.	42·6	Latest flowering ...	May 6/67
Mean daily Rainfall ditto ditto	0·07 in.	Difference	32 days.
Mean no. of Rainy days ditto ditto	19		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+9**	**—5**	**+15**	**—17**	**+5**	**+5**	**+4**	**—15**	**—3**
Mean Temp.....	+3·2	—0·9	+4·5	+0·1	+1·4	+0·5	+2·4	+0·7	—0·3
Mean dy. Rainfall	—0·03	+0 02	a	a	—0·01	—0·06	+0·01	a	a
No. of Rainy days	—6	+9	+6	+1	+2	—15	—6	a	+4

Duration of flowering.

	Ap	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	26...	.....	.....	.....	.....	.....	.....	23	
1870	26...	.....	.....	.....	.....	.....	30		
1871	25...	.....	.....	.....	.....	.....	.....	...11...	
1872	6.....	.....	.....	.....	.....	.....	.....	.....	1
1873	18...	.....	.....	.....	.....				

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83. Solanum Dulcamara. *Bitter-sweet.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	June	June	May	June	May	June	June	June
First flower	**23**	**11**	**18**	**31**	**5**	**30**	**18**	**15**	**7**
Mean Temperature of previous 6 weeks	51·6	50·4	51·3	52·7	48·9	49.3	50 7	48·6	48·6
Mean daily Rainfall of ditto	0·08	0·07	0·09	0·08	0·10	0·05	0·07	0·11	0·05
No. of Rainy days in ditto...	21	15	24	16	19	9	12	26	19

Average date for 9 years ... ... June 7
Mean Temp. of previous 6 wks. for 9 yrs. 50·3
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 17

Earliest flowering...May 23/65
Latest flowering June 18/67-71
Difference ... ...26 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—15**	**+4**	**+11**	**—7**	**—2**	**—8**	**+11**	**+8**	a
Mean Temp.....	+1·3	+0·1	+1·0	+2·4	—1·4	—1·0	+0·4	—1·7	—1·7
Mean dy. Rainfall	+0.01	a	+0·02	+0·01	+0·03	—0·02	a	+0·04	—0·02
No. of Rainy days	+4	—2	+7	—1	+2	—8	—5	+9	+2

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.
1869		5.....	.....	.....	7	
1870	30	.....	.....	.....	.....	...8
1871		18.....	.....	.....	21	
1872		15.....	.....	.....	17	
1873		7.....	.....			

84. Scrophularia nodosa. *Knotted Figwort.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Jun.	May	Jun.	May	Jun.	May	May	May	Jun.
First flower	**2**	**29**	**1**	**27**	**2**	**29**	**?27**	**24**	**8**
Mean Temperature of previous 6 weeks	52·6	47·6	49·5	51·9	48 8	49·1	48·8	45·6	48·9
Mean daily Rainfall of ditto	0·08	0·06	0·08	0·10	0·10	0 05	0·10	0·09	0·05
No. of Rainy days in ditto...	21	15	21	18	20	8	17	27	18

Average date for 9 years ... ... May 30
Mean Temp. of previous 6 weeks for 9 yrs. 49·1
Mean daily Rainfall ditto ditto 0 07 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering May 24/72
Latest flowering ...June 8/73
Difference ... ...15 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+3**	**—1**	**+2**	**—3**	**+3**	**—1**	**—3**	**—6**	**+9**
Mean Temp.....	+3·5	—1·5	+0·4	+2·8	—0·3	a	—0·3	—3·5	—0·2
Mean dy. Rainfall	+0·01	—0·01	+0·01	+0·03	+0·03	—0·02	+0·03	+0·02	—0·02
No. of Rainy days	+3	—3	+3	a	+2	—10	—1	+9	a

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.
1869		2.....	.....	.....	.....	
1870	29	.....	.....	.....	26	
1871	27...	.....	.....	.....	.....	24
1872	24.....	.....	.....	.....	17	
1873		8.....	.....	.....		

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85. Rhinanthus Crista-galli. *Yellow-rattle.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	May	May	May	May	May
First flower	**23**	**26**	**26**	**15**	**11**	**26**	**17**	**8**	**22**
Mean Temperature of previous 6 weeks	51·6	47·4	48·7	47 8	48·3	48·8	46 9	46·4	45·9
Mean daily Rainfall of ditto	0·08	0·07	0·09	0·07	0·09	0·05	0·09	0 09	0·05
No. of Rainy days in ditto	21	17	22	16	20	8	17	22	19

Average date for 9 years ... ... May 19
Mean Temp. of previous 6 weeks for 9 yrs. 47·9
Mean daily Rainfall ditto ditto 0·08 in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering ... May 8/72
Latest flowering May 26/66-67-70
Difference ... ... 18 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+4**	**+7**	**+7**	**—4**	**—8**	**+7**	**—2**	**—11**	**+3**
Mean Temp.....	+3·7	—0·5	+0·8	—0·1	+0·4	+0·9	—1·0	— ·5	—2·0
Mean dy. Rainfall	a	—0·01	+0·01	—0·01	+0·01	—0·03	+0·01	+0·01	—0·03
No. of Rainy days	+2	—2	+3	—3	+1	—11	—2	+3	a

Duration of flowering.

	May.	June	July	Aug.
1869	11.....			
1870	26.....	24		
1871	17.....	11		
1872	8.....	13		
1873	22.....	....	17	

86. Veronica Beccabunga. *Brooklime.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun.	May	May	May	May	May	May	May
First flower	**13**	**6**	**23**	**10**	**19**	**17**	**9**	**5**	**31**
Mean Temperature of previous 6 weeks	50·5	49·2	48·7	46·5	49·5	46·5	46·6	45·7	46·6
Mean daily Rainfall of ditto	0·07	0·08	0·09	0·07	0·09	0·06	0·09	0·09	0·05
No. of Rainy days in ditto...	20	18	23	14	20	9	18	20	19

Average date for 9 years... ... ... May 18
Mean Temp. of previous 6 wks. for 9 yrs. 47·7
Mean daily Rainfall ditto ditto 0·08 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering ... May 5/72
Latest flowering ...June 6/66
Difference ... ...32 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—5**	**+19**	**+5**	**—8**	**+1**	**—1**	**—9**	**—13**	**+13**
Mean Temp.....	+2·8	+1·5	+1·0	—1·2	+1·8	—1·2	—1·1	—2·0	—1·1
Mean dy. Rainfall	—0·01	a	+0·01	—0·01	+0·01	—0·02	+0·01	+0·01	—0·03
No. of Rainy days	+1	—1	+4	—5	+1	—10	—1	+1	a

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.
1869	19.....	.....	.....	.....	...	
1870	17.....	.....	.....	.....	20	
1871	9.....	.....	.....	.....	.....	20
1872	5.....	.....	.....	.....	17	
1873	31.....	.....	.....			

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87. Veronica Chamædrys. *Germander Speedwell.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	Ap 27	Ap 28	May 4	Ap 21	Ap 12	Ap 17	Ap 18	Moh 12	Ap 19
Mean Temperature of previous 6 weeks	44·7	45·4	46·5	42·9	39·5	40·2	44·3	44·6	42·4
Mean daily Rainfall of ditto	0·04	0·09	0·08	0·06	0·04	0·03	0·08	0·07	0·06
No. of Rainy days in ditto...	13	26	27	17	19	9	17	27	22

Average date for 9 years... ... ... Ap 17
Mean Temp. of previous 6 wks. for 9 yrs. 41·7
Mean daily Rainfall ditto ditto 0·06 in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering March 12/72
Latest flowering ...May 4/67
Difference ... ...54 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+10	+11	+17	+4	—5	a	+1	—36	+2
Mean Temp.....	+3·0	+3·7	+4·8	+1·2	—2·2	—1·5	+2·6	+2·9	+0·7
Mean dy. Rainfall	—0·02	+0·03	+0·02	a	—0·02	—0·03	+0·02	+0·01	a
No. of Rainy days	—6	+7	+8	—2	a	—10	—2	+8	+3

Duration of flowering.

	Moh.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1869		12.....	.....	.....	.....	.....	.....	.....	1
1870		17...	.....	.....	.....	.....	15		
1871		18...	.....	.....	.....	.....	...9		
1872	12...	.....	.....	.....	.....	.....	.....	.....	...3
1873		19...	.....	.....	.....				

88. Thymus Serpyllum. *Wild Thyme.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	Jun ?5	Jun. 4	May 29	May 31	Jun 5	May 26	Jun 1	Jun· 4	Jun 8
Mean Temperature of previous 6 weeks	52·9	49·0	49·2	52·7	48·9	48·8	49·6	48·0	48·9
Mean daily Rainfall of ditto	0·08	0·08	0·10	0·08	0·10	0·05	0·05	0.09	0·05
No. of Rainy days in ditto...	21	17	23	16	19	8	12	27	18

Average date for 9 years... ... ... June 2
Mean Temp. of previous 6 wks. for 9 yrs. 49·5
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering... May 26/70
Latest flowering ... Jun 8/73
Difference ... ...13 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+3	+2	—4	—2	+3	—7	—1	+2	+6
Mean Temp.....	+3·4	—0·5	—0·3	+3·2	—0·6	—0·7	+0·1	—1·5	—0·6
Mean dy. Rainfall	+0·01	+0·01	+0·03	+0·01	+0·03	—0·02	—0·02	+0·02	—0·02
No. of Rainy days	+3	—1	+5	—2	+1	—10	—6	+9	a

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1869		5.....	.....	.....	.....	29	
1870	26...	.....	.....	.....	.....	18	
1871		1.....	.....	.....	.....	.....	...5
1872		4.....	.....	.....	.....		
1873		8.....	.....				

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89. Nepeta Glechoma. *Ground Ivy.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Mch	Mch	Mch	Mch	Mch	Mch	Mch	Mch
First flower	**9**	**24**	**?30**	**14**	**3**	**23**	**25**	**4**	**17**
Mean Temperature of previous 6 weeks	38·2	36·1	37·4	42·0	42·2	36·3	43·4	44·1	36·4
Mean daily Rainfall of ditto	0·03	0·07	0·10	0·08	0·11	0·06	0·05	0·12	0·09
No. of Rainy days in ditto...	16	23	27	23	27	19	16	32	25

Average date for 9 years Mch.20
Mean Temp. of previous 6 weeks for 9 yrs. 39·1
Mean daily Rainfall ditto ditto 0·07 in.
Mean No. of Rainy days ditto ditto 23

Earliest flowering March 3/69
Latest flowering ... Ap. 9/65
Difference ... ... 37 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+20**	**+4**	**+10**	**—6**	**—17**	**+3**	**+5**	**—16**	**—3**
Mean Temp.....	—0·9	—3·0	—1·7	+2·9	+3·1	—2·8	+4·3	+5·0	—2·7
Mean dy. Rainfall	—0·04	a	+0·03	+0·01	+0·04	—0·01	—0·02	+0·05	—0·02
No. of Rainy days	—7	a	+4	a	+4	—4	—7	+9	+2

Duration of flowering.

	March.	April.	May.	June.	July.
1869	8.....	.....	.....	...	
1870	23.....	.....	.....	.....	15
1871	25	.....	.....	...1	
1872	4.....	.....	.....	21	
1873	17.....	.....	.....	.....	17

90. Lamium Galeobdolon. *Archangel.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Ap	Ap	Ap	Ap	Ap	Ap	May
First flower	**25**	**30**	**27**	**10**	**23**	**26**	**25**	**30**	**4**
Mean Temperature of previous 6 weeks	43·7	45·3	43·8	42 5	42·7	43·1	45·0	43·7	44·6
Mean daily Rainfall of ditto	0·04	0·09	0·11	0·06	0·06	0·01	0·08	0·09	0·05
No. of Rainy days in ditto...	13	26	31	21	21	4	13	20	18

Average date for 9 years ... ... Ap 26
Mean Temp. of previous 6 weeks for 9 yrs. 43·8
Mean daily Rainfall ditto ditto 0·06 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering Ap 10/68
Latest flowering ... May4/73
Difference ... ... 24 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—1**	**+4**	**+1**	**—16**	**—3**	**a**	**—1**	**+4**	**+8**
Mean Temp. ...	—0·1	+1·5	a	—1·3	—1·1	—0·7	+1·2	—0·1	+0·8
Mean dy. Rainfall	—0·02	+0·03	+0·05	a	a	—0·05	+0·02	+0·03	—0·01
No. of Rainy days	—5	+8	+13	+3	+3	—14	—5	+2	a

Duration of flowering.

	April.	May.	June.	July.
1869	23...	.....	...	
1870	26...	.....	14	
1871	25.....	26		
1872	30	.....	16	
1873		4.....	16	

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91. Stachys sylvatica. *Hedge Woundwort.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Jun.	Jun.	Jun.	May	Jun.	Jun.	Jun.	Jun.	Jun.
First flower	3	11	14	31	10	5	1	4	13
Mean Temperature of previous 6 weeks	52·6	50·4	52·0	52·7	49·5	50·1	49·6	48·0	49·6
Mean daily Rainfall of ditto	0·08	0·07	0·09	0·08	0·10	0·06	0·05	0·09	0·06
No. of Rainy days in ditto...	21	15	21	16	19	11	12	27	20

Average date for 9 years ... ... June 7
Mean Temp. of previous 6 wks. for 9 yrs. 50·3
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 17

Earliest flowering...May 31/68
Latest flowering ...Jun. 14/67
Difference ... ...14 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	—4	+4	+7	—7	+3	—2	—6	—3	+6
Mean Temp.....	+2·3	+0·1	+1·7	+2·4	—0·8	—0·2	—0·7	—2·3	—0·7
Mean dy. Rainfall	+0·01	a	+0·02	+0·01	+0·03	—0·01	—0·02	+0·02	—0·01
No. of Rainy days	+4	—2	+4	—1	+2	—6	—5	+10	+3

Duration of flowering.

	June.	July.	Aug.	Sep.	Oct.	Nov.
1869	10.....	.....	.....	.....	.....	1
1870	5.....	.....	.....	.....	...9	
1871	1.....	.....	.....	.....	.....	16
1872	4.....	.....	.....	.....		
1873	13.....	.....	.....			

92. Ajuga reptans. *Bugle.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap.	May	May	Ap.	Ap.	Ap.	Ap.	Ap.	May
First flower	29	5	4	28	26	26	25	15	5
Mean Temperature of previous 6 weeks	45.6	45·4	46·5	43·4	44·0	43·1	45·0	43·5	44·7
Mean daily Rainfall of ditto	0·04	0·07	0·08	0·07	0·06	0·01	0·08	0·06	0·05
No. of Rainy days in ditto...	13	26	27	18	21	4	13	15	19

Average date for 9 years... ... ... April 28
Mean Temp. of previous 6 wks. for 9 yrs. 44·3
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering April 15/72
Latest flowering May 5/66-73
Difference ... ...20 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+1	+7	+6	a	—2	—2	—3	—13	+7
Mean Temp. ...	+1·3	+1·1	+2·2	—0·9	—0·3	—1·2	+0·7	—0·8	+0·4
Mean dy. Rainfall	—0·03	a	+0·01	a	—0·01	—0·06	+0·01	—0·01	—0·02
No. of Rainy days	—5	+8	+9	a	+3	—14	—5	—3	+1

Duration of flowering.

	April.	May.	June.	July.	Aug.	Sep.	Oct.
1869	26...	.....	...				...5
1870	26...	.....	.....	...7			
1871	25...	.....	1				
1872	15.....	.....	21				
1873		5.....	.....	...8			

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93. Primula veris. *Cowslip.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Mch	Ap	Mch	Ap	Mch	Mch	Mch
First flower	**7**	**5**	**30**	**5**	**20**	**3**	**26**	**19**	**26**
Mean Temperature of previous 6 weeks	37·5	38·4	37·4	42·8	40·1	38·3	43·9	44·5	37·8
Mean daily Rainfall of ditto	0·04	0·07	0·10	0·07	0·08	0·05	0·04	0·06	0·09
No. of Rainy days in ditto.	18	26	27	20	26	17	15	23	24

Average date for 9 years ... ... Mch. 29
Mean Temp. of previous 6 weeks for 9 yrs. 39·3
Mean daily Rainfall ditto ditto 0·07 in.
Mean No. of Rainy days ditto ditto 22

Earliest flowering Mch. 19/72
Latest flowering ...Ap. 7/65
Difference ... ...19 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+9**	**+7**	**+1**	**+7**	**—9**	**+5**	**—3**	**—10**	**—3**
Mean Temp.....	—1·8	—0·9	—1·9	+3·5	+0·8	—1·0	+4·6	+5·2	—1·5
Mean dy. Rainfall	—0·03	a	+0·03	a	+0·01	—0 02	—0·03	—0·01	+0·02
No.of Rainy days	—4	+4	+5	—2	+4	—5	—7	+1	+2

Duration of flowering.

	Mar.	April.	May.	June.
1869	20...	.....	.....	
1870		3.....	.....	7
1871	26...	.....	26	
1872	19.....	.....	.....	...4
1873	26	.....	.....	16

94. Plantago lanceolata. *Ribwort Plantain.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Ap	Ap	Ap	Ap	Ap	Ap	Ap
First flower	**24**	**23**	**28**	**3**	**11**	**16**	**22**	**15**	**20**
Mean Temperature of previous 6 weeks	43·4	43·5	44·1	42·7	39·2	39·8	44·8	43·5	42·5
Mean daily Rainfall of ditto	0·04	0·08	0·11	0·07	0·05	0·03	0·06	0·06	0·06
No. of Rainy days in ditto...	13	26	30	21	20	10	16	15	21

Average date for 9 years ... ... Ap 18
Mean Temp. of previous 6 weeks for 9 yrs. 41·9
Mean daily Rainfall ditto ditto 0·06in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering... Ap 3/68
Latest flowering ... Ap 28/67
Difference ... ...25 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+6**	**+5**	**+10**	**—15**	**—7**	**—2**	**+4**	**—3**	**+2**
Mean Temp.	+1.5	+1·6	+2·2	+0·8	—2·7	—2·1	+2·9	+1·6	+0·6
Mean dy. Rainfall	—0·02	+0·02	+0·05	+0·01	—0·01	—0·03	+0·02	a	a
No. of Rainy days	—6	+7	+11	+2	+1	—9	—3	—4	+2

Duration of flowering.

	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1869	11.....	.....	.....	.....	.....	.....	.....	8
1870	16...	.....	.....	.....	.....	.....	30	
1871	22	.....	.....	.....	.....	.....	.....	12
1872	15.....	.....	.....	.....	.....	.....		
1873	20...	.....	.....	.....	.....			

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95. Plantago media. *Lamb's Lettuce.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun.	May	May	May	May	May	May	May
First flower	**23**	**4**	**?19**	**19**	**7**	**12**	**10**	**22**	**31**
Mean Temperature of previous 6 weeks	51·6	49·0	48·9	49·0	46·8	45·3	46·8	46 0	46·6
Mean daily Rainfall of ditto	0·08	0·08	0 09	0·08	0·08	0·03	0·09	0·09	0·05
No. of Rainy days in ditto...	21	17	24	16	20	6	18	26	19

Average date for 9 years	May 20	Earliest flowering...	May 7/69
Mean Temp. of previous 6 wks. for 9 yrs.	48·0	Latest flowering ...	June 4/66
Mean daily Rainfall ditto ditto	0·08 in.	Difference	28 days.
Mean no. of Rainy days ditto ditto	19		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+3**	**+15**	**—1**	**—1**	**—13**	**—8**	**—10**	**+2**	**+11**
Mean Temp.....	+3·6	+1·0	+0·9	+1·0	—1·2	—2·7	—1·2	—2·0	—1·4
Mean dy. Rainfall	a	a	+0·01	a	a	—0·05	+0·01	+0·01	—0·03
No. of Rainy days	+2	—2	+5	—3	+1	—13	—1	+7	a

Duration of flowering.

	May.	June.	July.	Aug.	Sep.	Oct.
1869	7.....	.....	.....	.....	.....	...5
1870	12.....	.....	.....	.....	.....	..3
1871	10.....	.....	.....	.....	.....	8
1872	22...	.....	.....	.....	.....	
1873	31	.....	.....	.....		

96. Rumex crispus. *Curled Dock.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Jun.	Jun.	Jun.	May	May	Jun.	Jun.	Jun.	Jun.
First flower	**7**	**?24**	**14**	**16**	**12**	**10**	**25**	**16**	**12**
Mean Temperature of previous 6 weeks	53·2	53·5	52 0	48·1	48·5	51·5	52·1	48·9	49·4
Mean daily Rainfall of ditto	0·08	0·07	0·09	0·07	0·09	0·05	0·09	0·11	0·06
No. of Rainy days in ditto...	21	15	21	16	20	10	15	26	19

Average date for 9 years	June 8	Earliest flowering...	May 12/69
Mean Temp. of previous 6 wks. for 9 yrs.	50·4	Latest flowering ...	June 25/71
Mean daily Rainfall ditto ditto	0·07 in.	Difference	44 days.
Mean no. of Rainy days ditto ditto	17		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—1**	**+16**	**+6**	**—23**	**—27**	**+2**	**+17**	**+8**	**+4**
Mean Temp.....	+2·8	+3·1	+1·6	—2·3	—1·9	+1.1	+1·7	—1·5	—1·0
Mean dy. Rainfall	+0·01	a	+0.02	a	+0·02	—0·02	+0·02	+0·04	—0·01
No. of Rainy days	+4	—2	+4	—1	+3	—7	—2	+9	+2

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1869	12.....	.....	.....	.....	.....	1	
1870		10.....	.....	.....	.....	3	
1871		25...	.....	.....	.....	.....	...11
1872		16.....	.....	.....	.....		
1873		12.....	.....	.....			

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97. Rumex Acetosella. *Sheep's Sorrel.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Muy	May	Jun	Ap	May	May	May	May	May
First flower	?23	26	10	25	1	16	?7	5	6
Mean Temperature of previous 6 weeks	51·6	47·4	51·2	48·3	45·3	46·4	46·3	45·7	44·7
Mean daily Rainfall of ditto	0·08	0·07	0·09	0·07	0·04	0·06	0·09	0.09	0·05
No. of Rainy days in ditto...	21	17	19	18	16	9	17	20	20

Average date for 9 years... ... ... May 13
Mean Temp. of previous 6 wks. for 9 yrs. 47·1
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering... Ap 25/68
Latest flowering ... Jun10/67
Difference ... ...46 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+10	+13	+28	—18	—12	+3	—6	—8	—7
Mean Temp.....	+4·5	+0·3	+4·1	—3·8	—1·8	—0·7	—0·8	—1·4	—2·4
Mean dy. Rainfall	+0·01	a	+0·02	a	—0·03	—0·01	+0·02	+0·02	—0·02
No. of Rainy days	+2	—2	a	—1	—3	—10	—2	+1	+1

Duration of flowering.

	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1869	1.....	...					
1870	16...	17					
1871	7.....			2		1	
1872	5.....	...16					
1873	6.....	.....	19				

98. Mercurialis perennis. *Dog's Mercury.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Mch	Feb.	Feb.	Feb.	Feb.	Mch	Mch	Feb.	Feb.
First flower	27	18	15	26	13	3	4	9	11
Mean Temperature of previous 6 weeks	35·2	41·4	38 0	40·8	42·9	34·8	39·2	41·2	38·5
Mean daily Rainfall of ditto	0·06	0·17	0·13	0·13	0·12	0·09	0·04	0·19	0·11
No. of Rainy days in ditto...	20	32	29	19	23	17	19	36	28

Average date for 9 years ... ... Feb. 23
Mean Temp. of previous 6 wks. for 9 yrs. 38·4
Mean daily Rainfall ditto ditto 0·10 in.
Mean no. of Rainy days ditto ditto 24

Earliest flowering... Feb. 9/72
Latest flowering ...Mch 27/65
Difference ... ...46 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+32	—5	—8	+3	—10	+8	+9	—14	—12
Mean Temp.....	—3·2	+3·0	—0·4	+2·4	+4·5	—3·6	+0·8	+2·8	+0·1
Mean dy. Rainfall	—0·04	+0.07	+0.03	+0·03	+0·02	—0·01	+0·06	+0·09	+0·01
No. of Rainy days	—4	+8	+5	—5	—1	—7	—5	+12	+4

Duration of flowering.

	Feb.	Mch.	April.	May.	June.	July.
1869	13.....	.....	.....	.....		
1870		3.....	.....	.....	...7	
1871		4.....	.....	.....		
1872	9.....	.....	.....	28		
1873	11.....	.....	.....	.....	2	

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99. Urtica dioica. *Great Nettle.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	Jun.	May	May	May	May	May	Jun.
First flower	?28	15	10	19	20	26	26	30	1
Mean Temperature of previous 6 weeks	52·3	45·9	51·2	49·0	49·4	48·8	48·8	46·8	46·6
Mean daily Rainfall of ditto	0·07	0·08	0 09	0·08	0·10	0·05	0·09	0·09	0·05
No. of Rainy days in ditto...	20	24	19	16	20	8	17	28	19

Average date for 9 years ... ... May 26
Mean Temp. of previous 6 wks. for 9 yrs. 48·7
Mean daily Rainfall ditto ditto 0·08 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...May15/66
Latest flowering ...June10/67
Difference ... ...26 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+2	—11	+15	—7	—6	a	a	+4	+6
Mean Temp.....	+3·6	—2·8	+2·5	+0·3	+0·7	+0·1	+0·1	—1·9	—2·1
Mean dy. Rainfall	—0·01	a	+0·01	a	+0.02	—0·03	+0·01	+0·01	—0·03
No. of Rainy days	+1	+5	a	—3	+1	—11	—2	+9	a

Duration of flowering.

	May.	June.	July.	Aug.	Sep.	Oct.
1869	20.....	.....	.....	.....	28	
1870	26...	.....	.....	.....	3	
1871	26...	.....	.....	.....	3	
1872	30	.....	.....	.....	.....	
1873		1.....	.....	.....		

100. Quercus Robur. *Oak.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap.	May	May	May	Ap.	May	May	May	May
First flower	24	?4	6	14	20	18	12	8	15
Mean Temperature of previous 6 weeks	43·4	45·4	47·1	47·6	41·6	46·9	46 9	46·4	45·2
Mean daily Rainfall of ditto	0·04	0·08	0·07	0·07	0·06	0·06	0·09	0 09	0·05
No. of Rainy days in ditto	13	26	25	16	20	9	18	22	19

Average date for 9 years ... ... May 7
Mean Temp. of previous 6 weeks for 9 yrs. 46·2
Mean daily Rainfall ditto ditto 0·06 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering ... Ap. 20/69
Latest flowering ... May 18/70
Difference ... ...28 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	—13	—3	—1	+7	—17	+11	+5	+1	+8
Mean Temp.....	—2·8	—0·8	+0·9	+1·4	—4·6	+0·7	+0·7	+0·2	—1·0
Mean dy. Rainfall	—0·02	+0·02	+0·01	+0·01	a	a	+0·03	+0·03	—0·01
No. of Rainy days	—5	+8	+7	—2	+2	—9	a	+4	+1

Duration of flowering.

	April.	May.	June	July
1869	20...	22		
1870		18.....		
1871		12.....26		
1872		8.....	11	
1873		15.....	1	

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101. Corylus Avellana. *Hazel.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Mch	Feb.	Feb.	Feb.	Jan.	Feb.	Feb.	Jan.	Jan.
First flower...	**10**	**21**	**15**	**16**	**17**	**10**	**13**	**29**	**?24**
Mean Temperature of previous 6 weeks	35·1	40·9	38·0	39·1	43·7	37·5	34·4	40·2	43·4
Mean daily Rainfall of ditto	0·08	0·15	0·13	0·15	0·16	0·10	0·09	0·21	0·18
No. of Rainy days in ditto	26	29	29	19	31	21	27	34	36

Average date for 9 years	Feb. 10	Earliest flowering...	Jan. 17/69
Mean Temp. of previous 6 weeks for 9 yrs.	38·1	Latest flowering...	Mch. 10/65
Mean daily Rainfall ditto ditto	0·13 in.	Difference	52 days.
Mean No. of Rainy days ditto ditto	26		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+28**	**+11**	**+5**	**+6**	**—24**	**a**	**+3**	**—12**	**—17**
Mean Temp.....	—3·0	+2·8	—0·1	+1·0	+5·6	—0·6	—3·7	+2·1	+5·3
Mean dy. Rainfall	—0·05	—0·02	a	+0·02	+0·03	—0·03	—0·04	+0·08	+0·05
No. of Rainy days	a	+3	+3	—7	+5	—5	+1	+8	+10

Duration of flowering.

	Jan.	Feb.	March.	April.	May.
1869	17	.....	.....	20	
1870		10.....	.....	28	
1871		13.....	.....	...6	
1872	29	.....	.....	23	
1873	24...	.....	.....	.....	2

102. Tamus communis. *Black Bryony.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun.	Jun.	May	May	May	May	Jun.	Jun.
First flower	**28**	**10**	**13**	**21**	**27**	**30**	**26**	**15**	**2**
Mean Temperature of previous 6 weeks	52·3	50·0	52 0	49·8	48·7	49·3	48·8	48·6	46·7
Mean daily Rainfall of ditto	0·07	0·06	0·09	0·08	0·10	0·05	0·09	0·11	0·06
No. of Rainy days in ditto...	20	14	20	16	21	9	17	26	20

Average date for 9 years...	June 2	Earliest flowering ...	May 21/68
Mean Temp. of previous 6 wks. for 9 yrs.	49·5	Latest flowering ...	June 15/72
Mean daily Rainfall ditto ditto	0·07 in.	Difference	25 days.
Mean no. of Rainy days ditto ditto	18		

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—5**	**+8**	**+11**	**—12**	**—6**	**—3**	**—7**	**+13**	**a**
Mean Temp.....	+2·8	+0·5	+2·5	+0·3	—0·8	—0·2	—0·7	—0·9	—2·8
Mean dy. Rainfall	a	—0·01	+0·02	+0·01	+0·03	—0·02	+0·02	+0·04	—0·01
No. of Rainy days	+2	—4	+2	—2	+3	—9	—1	+8	+2

Duration of flowering.

	May.	June.	July.	Aug.
1869	27...	.....		
1870	30	.....	...7	
1871	26...	.....		
1872		15.....		
1873		2.....	22	

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103. Orchis Morio. *Green-winged Orchis.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	May	May	Ap	Ap	May	May	Ap	May
First flower	**29**	**5**	**6**	**30**	**20**	**12**	**1**	**15**	**10**
Mean Temperature of previous 6 weeks	45·6	45·4	47·1	44·0	41·6	45·3	46 3	43·5	44·6
Mean daily Rainfall of ditto	0·04	0·07	0·07	0·07	0·06	0·03	0·09	0·06	0·06
No. of Rainy days in ditto...	13	26	25	17	20	6	16	15	20

Average date for 9 years ... ... May 1
Mean Temp. of previous 6 weeks for 9 yrs. 44.9
Mean daily Rainfall ditto ditto 0·06in
Mean No. of Rainy days ditto ditto 18

Earliest flowering... Ap 15/72
Latest flowering ...May12/70
Difference ... ...27 days

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—2**	**+4**	**+5**	**—1**	**—11**	**+11**	**a**	**—16**	**+9**
Mean Temp.....	+0·7	+0·5	+2·2	—0·9	—3·3	+0·4	+1·4	—1·4	—0·3
Mean dy. Rainfall	—0·02	+0·01	+0·01	+0·01	a	—0·03	+0·03	a	a
No. of Rainy days	—5	+8	+7	—1	+2	—12	—2	—3	+2

Duration of flowering.

	April.	May.	June.	July.
1869	20...	.....	...	
1870		12.....	7	
1871		1.....	1	
1872	15.....	.....	12	
1873		10.....	28	

104. Orchis mascula. *Early Purple Orchis.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Ap	Ap	Ap	Ap	Ap	Ap	Ap
First flower	**24**	**24**	**19**	**21**	**11**	**19**	**20**	**9**	**19**
Mean Temperature of previous 6 weeks	43·4	43·8	40.8	42·9	39·2	40·9	44 6	43·4	42·4
Mean daily Rainfall of ditto	0·04	0·08	0·12	0·06	0·05	0·03	0·08	0·07	0·06
No. of Rainy days in ditto...	13	26	29	17	20	8	17	19	22

Average date for 9 years ... ... Ap 18
Mean Temp. of previous 6 wks. for 9 yrs. 41·9
Mean daily Rainfall ditto ditto 0·06 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering ... Ap 9/72
Latest flowering Ap 24/65.
Difference ... ...15 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+6**	**+6**	**+1**	**+3**	**—7**	**+1**	**+2**	**—9**	**+1**
Mean Temp.....	+1·5	+1·9	—1·1	+1·0	—2·7	+1·0	+2·7	+1·5	+0·5
Mean dy. Rainfall	—0·02	+0·02	+0·06	a	—0·01	—0·03	+0·02	+0·01	a
No. of Rainy days	—6	+7	+10	—2	+1	—11	—2	a	+3

Duration of flowering.

	April.	May.	June.	July.
1869	11.....	.....		
1870	19.....	.....	14	
1871	20.....	.....	1	
1872	9	.....	12	
1873	19.....	.....	20	

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105. Orchis maculata. *Spotted Orchis.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun.	Jun.	May	May	May	Jun.	May	Jun.
First flower	**23**	**6**	**11**	**20**	**27**	**30**	**11**	**28**	**2**
Mean Temperature of previous 6 weeks	51·6	49·2	51·6	49·4	48·7	49·3	49·2	46·2	46·7
Mean daily Rainfall of ditto	0·08	0·08	0·09	0·08	0·10	0·05	0·03	0·09	0·06
No. of Rainy days in ditto...	21	18	18	15	21	9	7	27	20

Average date for 9 years... ... ... May 31
Mean Temp. of previous 6 wks. for 9 yrs. 49·3
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering May 20/68
Latest flowering Jun. 11/67-71
Difference ... ... 22 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—8**	**+6**	**+11**	**—11**	**—4**	**—1**	**+11**	**—3**	**+2**
Mean Temp. ...	+2·3	—0·1	+2·3	+0·1	—0·6	a	—0·1	—3·1	—2·6
Mean dy. Rainfall	+0·01	+0·01	+0·02	+0·01	+0·03	—0·02	—0·04	+0·02	—0·01
No. of Rainy days	+3	a	a	—3	+3	—9	—11	+9	+2

Duration of flowering.

	May.	June.	July.	Aug.
1869	27...	.....		
1870	30	.....	15	
1871		11.....	...	
1872	28...	.....		
1873		2.....	.....	

106. Habenaria chlorantha. *Butterfly Orchis.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	June	June	May	May	May	May	May	June
First flower	**31**	**11**	**7**	**21**	**23**	**21**	**17**	**24**	**2**
Mean Temperature of previous 6 weeks	52·5	50·4	50·6	49·8	49·1	48·0	46·9	45·6	46·7
Mean daily Rainfall of ditto	0·06	0·07	0·09	0·08	0·10	0·05	0·09	0·09	0·06
No. of Rainy days in ditto...	19	15	21	16	21	8	17	27	20

Average date for 9 years ... ... May 28
Mean Temp. of previous 6 wks. for 9 yrs. 48·9
Mean daily Rainfall ditto ditto 0·08 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering...May 17/71
Latest flowering June 11/66
Difference ... ...25 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+3**	**+14**	**+10**	**—7**	**—5**	**—7**	**—11**	**—4**	**+5**
Mean Temp.....	+3·6	+1·5	+1·7	+0·9	+0·2	—0·9	—2·0	—3·3	—2·2
Mean dy. Rainfall	—0·02	—0·01	+0·01	a	+0·02	—0·03	+0·01	+0·01	—0·02
No. of Rainy days	a	—4	+2	—3	+2	—11	—2	+8	+1

Duration of flowering.

	May.	June.	July.	Aug.
1869	23...	...		
1870	21.....	.....	7	
1871	17.....			
1872	24			
1873		2.....	19	

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107. Listera ovata. *Twayblade.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	May	May	May	May	May
First flower	**24**	**21**	**15**	**9**	**5**	**20**	**17**	**16**	**24**
Mean Temperature of previous 6 weeks	51·6	47·1	49·0	46·0	46·2	47·5	46·9	46·1	46·4
Mean daily Rainfall of ditto	0·08	0·07	0 09	0·07	0·07	0 06	0·09	0·08	0·05
No. of Rainy days in ditto...	22	20	25	14	18	9	17	23	20

Average date for 9 years ... ... May 17
Mean Temp. of previous 6 weeks for 9 yrs. 47·7
Mean daily Rainfall ditto ditto 0·08 in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering May 5 /69
Latest flowering May 24/65-73
Difference ... ...19 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+7**	**+4**	**—2**	**—8**	**—12**	**+3**	**a**	**—1**	**+7**
Mean Temp.....	+3·9	—0 6	+1·3	—1·7	—1·5	—0.2	—0·3	—1 6	—1·3
Mean dy. Rainfall	a	—0·01	+0·01	—0·01	—0·01	—0·02	+0·01	a	—0·03
No. of Rainy days	+3	+1	+6	—5	—1	—9	—2	+4	+1

Duration of flowering.

	May.	June.	July.	Aug.
1869	5.....			
1870	20.....	.....	.....	
1871	17.....			
1872	16.....	.....		
1873	24...	.....	19	

108. Iris Pseud-acorus. *Yellow Iris.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun.	Jun.	May	May	May	May	Jun.	Jun.
First flower	**27**	**?4**	**?8**	**19**	**15**	**30**	**26**	**9**	**2**
Mean Temperature of previous 6 weeks	52·2	49·0	50·7	49·0	49·1	49·3	48·8	47·7	46·7
Mean daily Rainfall of ditto	0·07	0·08	0·09	0·08	0·09	0·05	0·09	0·10	0·06
No. of Rainy days in ditto...	20	17	20	16	18	9	17	27	20

Average date for 9 years May29
Mean Temp. of previous 6 wks. for 9 yrs. 49 0
Mean daily Rainfall ditto ditto 0·08 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering...May 15/69
Latest flowering ...Jun. 9/72
Difference ... ...25 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	18?1	1872	1873
First flowering...	**—2**	**+6**	**+10**	**—10**	**—14**	**+1**	**—3**	**+11**	**+4**
Mean Temp.....	+3·2	a	+1·7	a	+0·1	+0·3	—0·2	—1·3	—2·3
Mean dy. Rainfall	—0·01	a	+0·01	a	+0·01	—0 03	+0·01	+0·02	—0·02
No. of Rainy days	+2	—1	+2	—2	a	—9	—1	+9	+2

Duration of flowering.

	May.	June.	July.	Aug.
1869	15.....			
1870	30	2		
1871	26...	.....		
1872		9.....		
1873		2.....28		

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109. Narcissus Pseudo-narcissus. *Daffodil.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Mch	Feb.	Feb.	Feb.	Mch	Mch	Feb.	Mch
First flower	**?3**	**6**	**22**	**?24**	**?12**	**25**	**10**	**26**	**10**
Mean Temperature of previous 6 weeks	36·7	38·1	39·4	40·7	43 0	36·8	41·1	42·7	35·4
Mean daily Rainfall of ditto	0·05	0·11	0·10	0·13	0·13	0·06	0·06	0·14	0·07
No. of Rainy days in ditto	19	26	27	20	24	19	22	34	22

Average date for 9 years ... ... Mch. 6
Mean Temp. of previous 6 weeks for 9 yrs. 39·3
Mean daily Rainfall ditto ditto 0·09 in.
Mean No. of Rainy days ditto ditto 24

Earliest flowering Feb. 12/69
Latest flowering ...Ap. 3 /65
Difference ... ...50 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+28**	a	**—12**	**—11**	**—22**	**+19**	**+4**	**—9**	**+4**
Mean Temp......	—2 6	—1·2	+0·1	+1·4	+3·7	—2 5	+1·8	+3·4	—3·9
Mean dy. Rainfall	—0·04	+0·02	+0·01	+0·04	+0·04	—0·03	—0·03	+0·05	—0·02
No. of Rainy days	—5	+2	+3	—4	a	—5	—2	+10	—2

Duration of flowering.

	Feb.	March.	April.	May.
1869	12.....	.....	...2	
1870		25...	12	
1871		10.....		
1872	26.....	.....	11	
1873		10.....	15	

110. Galanthus nivalis. *Snowdrop.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Feb.	Feb.	Feb.	Feb.	Jan.	Feb.	Feb.	Jan.	Jan.
First flower	**20**	**?3**	**6**	**3**	**11**	**11**	**10**	**21**	**24**
Mean Temperature of previous 6 weeks	33 0	41·7	35·2	36·7	44·6	37·1	33·4	39·9	43·4
Mean daily Rainfall of ditto	0·11	0·16	0·11	0·14	0·17	0·10	0·09	0·15	0·18
No. of Rainy days in ditto...	25	31	26	15	34	20	26	32	36

Average date for 9 years... ... ... Feb 2
Mean Temp. of previous 6 wks. for 9 yrs. 37·4
Mean daily Rainfall ditto ditto 0·12 in.
No. Mean of Rainy days ditto ditto 25

Earliest flowering Jan. 11/69
Latest flowering ...Feb. 20/65
Difference · ... ...40 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+18**	**+1**	**+4**	**+1**	**—22**	**+9**	**—8**	**—12**	**—9**
Mean Temp......	—4·4	+4.3	—2·2	—0·7	+7·2	—0·3	—4·0	+2·5	+6 0
Mean dy. Rainfall	—0·01	+0·04	—0·01	+0·02	+0·05	—0·02	—0·03	+0·03	+0·06
No. of Rainy days	a	+6	+1	—10	+9	—5	+1	+7	+11

Duration of flowering.

	Jan.	Feb.	Mch.	April.	May.
1869	11.....	.....	25		
1870		11.....	.....	...5	
1871		10.....	31		
1872	21.....	.....			
1873	24...	.....	.....	...3	

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111. Endymion nutans. *Blue-bell.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap.	Ap.	Ap.	Ap.	Ap.	Ap.	Ap.	Mch	Ap.
First flower	**16**	**13**	**9**	**5**	**9**	**22**	**14**	**31**	**17**
Mean Temperature of previous 6 weeks	39·9	40·5	37·8	42·8	38·5	41·7	44·0	43·3	42·1
Mean daily Rainfall of ditto	0·02	0·09	0·10	0·07	0·05	0·03	0·05	0·08	0·07
No. of Rainy days in ditto...	13	25	26	20	22	6	14	22	22

Average date for 9 years ... ... Ap. 12
Mean Temp. of previous 6 weeks for 9 yrs. 40·7
Mean daily Rainfall ditto ditto 0 06 in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering March 31/72
Latest flowering ... Ap.22/70
Difference ... .. 22 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+4**	**+1**	**—3**	**—7**	**—3**	**+10**	**+2**	**—12**	**+5**
Mean Temp. ...	—0·8	—0·2	—2·9	+2·1	—2·2	+1·0	+3·3	+2·6	+1·4
Mean dy. Rainfall	—0·04	+0·03	+0·04	+0·01	—0·01	—0 03	—0·01	+0·02	+0·01
No. of Rainy days	—6	+6	+7	+1	+3	—13	—5	+3	+3

Duration of flowering.

	March.	April.	May.	June.
1869		9.....	.....	...
1870		22.....	.....	24
1871		14.....	.....	1
1872	31	.....	.....	16
1873		17.....	.....	20

112. Luzula campestris. *Field-rush.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap.	Ap.	Ap.	Ap.	Ap.	Ap.	Ap.	Mch	Ap.
First flower	**14**	**30**	**13**	**6**	**2**	**19**	**4**	**12**	**3**
Mean Temperature of previous 6 weeks	39·3	45·3	38·7	42·9	37·5	40·9	43·6	44·6	39·7
Mean daily Rainfall of ditto	0·03	0 09	0·10	0·07	0·05	0·03	0·04	0·07	0·09
No. of Rainy days in ditto...	14	26	29	20	22	8	13	27	27

Average date for 9 years ... ... Ap. 8
Mean Temp. of previous 6 weeks for 9 yrs. 40·3
Mean daily Rainfall ditto ditto 0·06in.
Mean No. of Rainy days ditto ditto 21

Earliest flowering... Mch12/72
Latest flowering ... Ap.30/66
Difference ... ...49 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+6**	**+22**	**+5**	**—2**	**—6**	**+11**	**—4**	**—27**	**—5**
Mean Temp.	—1.0	+5·0	—1·6	+2·6	—2·8	+0·6	+3·3	+4·3	—0·6
Mean dy. Rainfall	—0 03	+0·03	+0·04	+0·01	—0·01	—0·03	—0·02	+0·01	+0·03
No. of Rainy days	—7	+5	+8	—1	+1	—13	—8	+6	+6

Duration of flowering.

	March.	April.	May.	June.	July.	Aug.
1869		2.....	.....			
1870		19.....	.....	...11		
1871		4.....	26			
1872	12.....	.....	.....	..4		
1873		8.....	25			

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113. Arum maculatum. *Cuckoo-pint.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Ap	Ap	Ap	Ap	Ap	Ap	Ap
First flower	**26**	**19**	**23**	**10**	**18**	**?18**	**20**	**12**	**20**
Mean Temperature of previous 6 weeks	44·2	42·6	42.1	42·5	41·2	40·5	44·6	43·6	42·5
Mean daily Rainfall of ditto	0·04	0·08	0·12	0·06	0·06	0·03	0·08	0·06	0·06
No. of Rainy days in ditto...	13	26	29	21	20	8	17	16	21

Average date for 9 years ... ... Ap 18
Mean Temp. of previous 6 wks. for 9 yrs. 41·9
Mean daily Rainfall ditto ditto 0·06 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering ... Ap 10/68
Latest flowering Ap 26/65
Difference ... ...16 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+8**	**+1**	**+5**	**+8**	a	a	**+2**	**—6**	**+2**
Mean Temp.....	+2·3	+0·7	+0·2	+0·6	—0·7	—1 4	+2·7	+1·7	+0.6
Mean dy. Rainfall	—0·02	+0·02	+0·06	a	a	—0·03	+0·02	a	a
No. of Rainy days	—6	+7	+10	+2	+1	—11	—2	—8	+2

Duration of flowering.

	April.	May.	June.	July.
1869	18.....	.....		
1870	18.....	28		
1871	20.....	19		
1872	12.....	28		
1873	20.....	.....	8	

114. Carex præcox. *Vernal Sedge.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap	Ap	Ap	May	Ap	May	May	Ap	Ap
First flower	**?26**	**22**	**23**	**?3**	**20**	**?13**	**?4**	**13**	**29**
Mean Temperature of previous 6 weeks	44·2	43·4	42·1	44·7	41·6	45·5	46 3	43·6	43·5
Mean daily Rainfall of ditto	0·04	0·08	0·12	0·07	0·06	0·04	0·09	0·06	0·04
No. of Rainy days in ditto...	13	27	29	15	20	7	17	15	19

Average date for 9 years ... ... Ap 27
Mean Temp. of previous 6 weeks for 9 yrs. 44.1
Mean daily Rainfall ditto ditto 0·06in
Mean No. of Rainy days ditto ditto 18

Earliest flowering... Ap 13/72
Latest flowering ...May13/70
Difference ... ...30 days

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—1**	**—5**	**—4**	**+6**	**—7**	**+16**	**+7**	**—14**	**+2**
Mean Temp.....	+0·1	—0·7	—2·0	+0·6	—2·5	+1·4	+2·2	—0·5	—0·6
Mean dy. Rainfall	—0·02	+0·02	+0·06	+0·01	a	—0·02	+0·03	a	—0·02
No. of Rainy days	—5	+9	+11	—3	+2	—11	—1	—3	+1

Duration of flowering.

	April.	May.	June.	July.
1869	20.....	22		
1870		13.....		
1871		4.....		
1872	13.....	30		
1873	29...	.....	2	

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115. Carex glauca. *Glaucous Sedge.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	May 3	May 5	May 4	Ap. 25	Ap. 20	May 12	Ap. 25	Ap. 15	Ap. 20
Mean Temperature of previous 6 weeks	47·1	45·4	46·5	48·3	41·6	45·3	45·0	43 5	42·5
Mean daily Rainfall of ditto	0·04	0·07	0·08	0·07	0·06	0 03	0·08	0·06	0·06
No. of Rainy days in ditto...	15	26	27	18	20	6	13	15	21

Average date for 9 years ... ... April 28
Mean Temp. of previous 6 weeks for 9 yrs. 44·3
Mean daily Rainfall ditto ditto 0·07 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering April 15/72
Latest flowering ...May 12/70
Difference ... ...27 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+5	+7	+6	—3	—8	+14	—3	—13	—8
Mean Temp.....	+2·8	+1·1	+2·2	—1·0	—2·7,	+1·0	+0·7	—0 8	—1·8
Mean dy.Rainfall	—0·03	a	+0·01	a	—0·01	—0·04	+0·01	—0·01	—0·01
No. of Rainy days	—3	+8	+9	a	+2	—12	—5	—3	+3

Duration of flowering.

	April.	May.	June.	July.
1869	20...,.	.....		
1870		12.....	11	
1871	25...	26		
1872	15.....	20		
1873	20.....	.....	2	

116. Phalaris arundinacea. *Reed-grass.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	Jun. 4	Jun. ?29	Jun. 12	Jun. 2	Jun. 10	Jun. 3	Jun. 11	Jun. 15	Jun. 20
Mean Temperature of previous 6 weeks	52·7	55·5	51·8	53·0	49·5	49·5	49·2	48·6	51·4
Mean daily Rainfall of ditto	0·08	0·07	0·09	0·06	0·10	0·06	0·03	0·11	0·04
No. of Rainy days in ditto...	21	16	19	14	19	11	7	26	17

Average date for 9 years... ... ... June 12
Mean Temp. of previous 6 wks. for 9 yrs. 51·0
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 16

Earliest flowering...Jun. 2/68
Latest flowering ...Jun. 29/66
Difference ... ...27 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	—8	+17	a	—10	—2	—9	—1	+3	+8
Mean Temp.....	+1·7	+4·5	+0·8	+2·0	—1·5	—1·5	—1·8	—2·4	+0·4
Mean dy. Rainfall	+0·01	a	+0·02	—0·01	+0·03	—0·01	—0·04	+0·04	—0·03
No. of Rainy days	+5	a	+3	—2	+3	—5	—9	+10	+1

Duration of flowering.

	June.	July.	Aug.	Sept.
1869	10.....	.....	.....	
1870	3.....	.....		
1871	11.....	.....	.....	2
1872	15.....	.....		
1873	20.....	.....		

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117. Anthoxanthum odoratum. *Vernal Grass.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap.	Ap.	Ap.	Ap.	Ap.	May	Ap.	Ap	Ap.
First flower	?24	30	26	22	20	12	25	3	21
Mean Temperature of previous 6 weeks	43·4	45·3	43·3	43 1	41·6	45·3	45 0	43·5	42·8
Mean daily Rainfall of ditto	0·04	0·09	0·11	0·06	0·06	0·03	0·08	0·09	0·06
No. of Rainy days in ditto...	13	26	30	17	20	6	13	22	20

Average date for 9 years ... ... Ap. 24
Mean Temp. of previous 6 weeks for 9 yrs. 43·3
Mean daily Rainfall ditto ditto 0·07 in.
Mean No. of Rainy days ditto ditto 18

Earliest flowering April 3/72
Latest flowering May 12/70
Difference ... ...39 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	a	+6	+2	—2	—4	+18	+1	—21	—3
Mean Temp. ...	+0·1	+2·0	a	—0·2	—1·7	—2·0	+1·7	+0·2	+0·5
Mean dy. Rainfall	—0·03	+0·02	+0·04	—0·01	—0·01	—0·04	+0·01	+0·02	—0·01
No. of Rainy days	—5	+8	+12	—1	+2	—12	—5	+4	+2

Duration of flowering.

	April.	May.	June.	July.	Aug.	Sept.	Oct.
1869	20.....	.....	.....	.....	.....	...7	
1870		12.....	.....	...			
1871	25...	.....					
1872	3.....	.....	13				
1873	21.....	.....	.....	19			

118. Alopecurus pratensis. *Meadow Fox-tail.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Ap.	Ap.	Ap.	Ap.	Mch	Ap.	Ap.	Ap.	Ap.
First flower	22	15	18	14	25	19	8	4	3
Mean Temperature of previous 6 weeks	42·5	41·3	40·3	41 9	38·8	40·9	43·6	43·5	39·7
Mean daily Rainfall of ditto	0·04	0·09	0·12	0·04	0·06	0·03	0·04	0 08	0·09
No. of Rainy days in ditto	14	27	28	17	22	8	13	21	27

Average date for 9 years ... ... Ap. 11
Mean Temp. of previous 6 weeks for 9 yrs. 40·6
Mean daily Rainfall ditto ditto 0·06 in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering ...Mch 25/69
Latest flowering ... Ap. 22/65
Difference ... ...28 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+11	+4	+7	+3	—17	+8	—3	—7	—8
Mean Temp.....	+1·9	+0·7	—0 3	+1·3	—1·8	+0·3	+3·0	+2·9	—0·9
Mean dy. Rainfall	—0·02	+0·03	+0·06	—0·02	a	—0·03	—0·02	+0·02	+0·03
No. of Rainy days	—5	+8	+9	—2	+3	—11	—6	+2	+8

Duration of flowering.

	March.	April.	May.	June	July
1869	25...	.....	.....	...	
1870		19.....	.....	.....	...2
1871		8.....	26		
1872		4.....	.....	15	
1873		3.....	.....	.....	

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119. Trisetum flavescens. *Yellow Oat-grass.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	Jun.	Jun.	Jun.	Jun.	Jun.	Jun.	Jun.	Jun.	May
First flower	**5**	**14**	**8**	**1**	**8**	**7**	**8**	**4**	**31**
Mean Temperature of previous 6 weeks	52·9	51·5	50·7	52·5	49·4	50·3	49·3	48 0	46·6
Mean daily Rainfall of ditto	0·08	0·07	0 09	0·06	0·10	0·06	0·05	0·09	0·05
No. of Rainy days in ditto...	21	14	20	15	19	11	9	27	19

Average date for 9 years ... ... June 6
Mean Temp. of previous 6 wks. for 9 yrs. 50·1
Mean daily Rainfall ditto ditto 0·07 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering ...May31/73
Latest flowering ...June14/66
Difference ... ...14 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—1**	**+8**	**+2**	**—5**	**+2**	**+1**	**+2**	**—2**	**—6**
Mean Temp.....	+2·8	+1·4	+0·6	+1·8	—0·7	+0·2	—0·8	—2·1	—3·5
Mean dy. Rainfall	+0·01	a	+0·02	—0·01	+0·03	—0·01	—0·02	+0·02	—0·02
No. of Rainy days	+3	—4	+2	—3	+1	—7	—9	+9	+1

Duration of flowering.

	May.	June.	July.	Aug.	Sep.	Oct.	Nov.
1869		8.....					
1870		7.....	.....				
1871		8.....	.....	.....	.....	.....	16
1872		4.....					
1873	31	.....	.....	.....			

120. Poa pratensis. *Meadow Grass.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	Ap.	Ap.	Ap.	Ap.	Ap.	Ap.
First flower	**7**	**6**	**7**	**23**	**19**	**19**	**29**	**13**	**28**
Mean Temperature of previous 6 weeks	48·9	45·4	47·5	43·3	41·3	40·9	46·2	43·6	43·2
Mean daily Rainfall of ditto	0·04	0·07	0·07	0·07	0·06	0·03	0·09	0·06	0·04
No. of Rainy days in ditto...	16	26	24	17	20	8	16	15	19

Average date for 9 years ... ... Ap. 27
Mean Temp. of previous 6 wks. for 9 yrs. 44·1
Mean daily Rainfall ditto ditto 0·06 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering Ap. 13/72
Latest flowering May 7/65-67
Difference ... ... 24 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**+10**	**+9**	**+10**	**—4**	**—8**	**—8**	**+2**	**—14**	**+1**
Mean Temp. ...	+4·8	+1·3	+3·4	—0·8	—2·8	—3·2	+2·1	—0·5	—0·9
Mean dy. Rainfall	—0·02	+0·01	+0·01	+0·01	a	—0·03	+0·03	a	—0·02
No. of Rainy days	—2	+8	+6	—1	+2	—10	—2	—3	+1

Duration of flowering.

	April.	May.	June.	July.	Aug.
1869	19.....	.....	.....	.....	.....
1870	19.....	.....	.....	...7	
1871	29	.....	.....		
1872	13.....	.....	.....	.....	.....
1873	28	.....	.....	.....	

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121. Briza media. *Quaking Grass.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	Jun.	May	May	May	May	May	May	May
First flower	**22**	**2**	**18**	**19**	**22**	**25**	**19**	**30**	**30**
Mean Temperature of previous 6 weeks	51·4	48·3	48·8	49·0	49·3	48·8	47·3	46·8	46·5
Mean daily Rainfall of ditto	0·08	0·07	0·09	0·08	0·10	0·05	0·09	0·09	0·05
No. of Rainy days in ditto	22	15	24	16	21	8	18	28	18

Average date for 9 years ... ... May 24
Mean Temp. of previous 6 wks. for 9 yrs. 48·5
Mean daily Rainfall ditto ditto 0·08 in.
Mean no. of Rainy days ditto ditto 19

Earliest flowering ... May 18/67
Latest flowering ... June 2/66
Difference ... ...15 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**—2**	**+9**	**—6**	**—5**	**—2**	**+1**	**—5**	**+6**	**+6**
Mean Temp.....	+2·9	—0·2	+0·3	+0·5	+0·8	+0·3	—1·2	—1·7	—2·0
Mean dy. Rainfall	a	—0·01	+0·01	a	+0·02	—0·03	+0·01	+0·01	—0·03
No. of Rainy days	+3	—4	+5	—3	+2	—11	—1	+9	—1

Duration of flowering.

	May.	June.	July.	Aug.
1869	22...	...		
1870	25...	.....	15	
1871	19.....	.....		
1872	30	21		
1873	30	.....	19	

122. Dactylis glomerata. *Cock's-foot Grass.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
	May	May	May	May	Ap	May	May	Ap	May
First flower	**8**	**15**	**16**	**13**	**29**	**14**	**8**	**28**	**2**
Mean Temperature of previous 6 weeks	49·4	45·9	48·8	47·2	45·1	45·8	46·4	43·5	44·4
Mean daily Rainfall of ditto	0·05	0·08	0·09	0·07	0·05	0·04	0·09	0·09	0·04
No. of Rainy days in ditto...	17	24	24	16	18	8	17	20	18

Average date for 9 years ... ... May 8
Mean Temp. of previous 6 wks. for 9 yrs. 46.4
Mean daily Rainfall ditto ditto 0·06 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering... Ap 28/72
Latest flowering May 16/67
Difference ... ...18 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	**a**	**+7**	**+8**	**+5**	**—9**	**+6**	**a**	**—10**	**—6**
Mean Temp.....	+3·0	—0·5	+2·4	+0·8	—1·3	—0·6	a	+2·9	—2·0
Mean dy. Rainfall	—0·01	+0·02	+0·03	+0·01	—0·01	—0·02	+0·03	+0·03	—0·02
No. of Rainy days	—1	+6	+6	—2	a	—10	—1	+2	a

Duration of flowering.

	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869	29...	.....	.....	.....	.....	.....	.....	...16	
1870		14...	.....	.....	.....	27			
1871		8.....	.....	.....	.....	.....	.....	18	
1872	28...	.....	.....	.....	.....	.....	.....	.....	16
1873		2.....	.....	.....	.....				

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123. Lolium perenne. *Rye Grass.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	May 8	May 4	May 7	May 4	May 1	May 12	Ap. 25	Ap. 30	May 6
Mean Temperature of previous 6 weeks	49·4	45·4	47·5	44·9	45·3	45·3	45·0	43·7	44·7
Mean daily Rainfall of ditto	0·05	0·08	0·07	0·07	0·04	0·03	0·08	0·09	0·05
No. of Rainy days in ditto...	17	26	24	14	16	6	13	20	20

Average date for 9 years ... ... May 4
Mean Temp. of previous 6 wks. for 9 yrs. 45·5
Mean daily Rainfall ditto ditto 0·06 in.
Mean no. of Rainy days ditto ditto 18

Earliest flowering... Ap. 25/71
Latest flowering ...May 12/70
Difference ... ...17 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+4	a	+3	a	—3	+8	—9	—4	+2
Mean Temp.....	+3·9	—0·1	+2·0	—0·6	—0·2	—0·2	—0·5	—1·8	—0·8
Mean dy. Rainfall	—0·01	+0.02	+0·01	+0.01	—0·02	—0·03	+0·02	+0·03	—0·01
No. of Rainy days	—1	+8	+6	—4	—2	—12	—5	+2	+2

Duration of flowering.

	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1869		1...	.....	.....	.....	.....	.....	28	
1870		12.....	.....	.....	.....	.....	.....	..13	
1871	25...	.....	.....	.....	.....	.....	.....	...16	
1872	30	.....	.....	.....	.....	.....	.....	.....	...9
1873		6.....	.....	.....	.....				

124. Equisetum arvense. *Corn Horse-tail.*

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flower	Ap. 23	Ap. 21	Ap. 26	Ap. 10	Ap. 17	Ap. 16	Moh ?29	Ap. 9	Ap. 8
Mean Temperature of previous 6 weeks	43·0	43·2	43·3	42·5	41·0	39·8	43·7	43·4	41·0
Mean daily Rainfall of ditto	0·04	0·08	0·11	0·06	0·06	0·03	0·04	0·07	0·08
No. of Rainy days in ditto...	14	27	30	21	20	10	14	19	27

Average date for 9 years Ap.14
Mean Temp. of previous 6 weeks for 9 yrs. 41·1
Mean daily Rainfall ditto ditto 0·06in.
Mean No. of Rainy days ditto ditto 19

Earliest flowering... Moh29/71
Latest flowering ... Ap.26/67
Difference ... ...28 days.

Variations of the above from means.

	1865	1866	1867	1868	1869	1870	1871	1872	1873
First flowering...	+9	+7	+12	—4	+3	+2	—16	—5	—6
Mean Temp.....	+1·9	+2·1	+2·2	+1·4	—0·1	—1·3	+2·6	+2·3	—0·1
Mean dy. Rainfall	—0·02	+0·02	+0·05	a	a	—0·03	—0·02	+0·01	+0·02
No. of Rainy days	—5	+8	+11	+2	+1	—9	—5	a	+8

Duration of flowering.

	March.	April.	May.	June.
1869		17.....	.....	
1870		16.....	28	
1871	29	.....		
1872		9.....	20	
1873		8.....	.....18.....	

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EIGHTEENTH HALF-YEARLY

REPORT

OF THE

MARLBOROUGH COLLEGE

Natural History Society,

FOUNDED APRIL 9th, 1864,

FOR THE

HALF-YEAR,

ENDING CHRISTMAS, 1873.

"TUM MIHI NATURÆ LIBEAT PERDISCERE MORES:
QUIS DEUS HANC MUNDI TEMPERET ARTE DOMUM."

MARLBOROUGH:
PRINTED BY C. PERKINS, TIMES OFFICE.
1874.

D. 20.1288

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PREFACE.

With the publication of this Report the Natural History Society enters upon a new era of its existence. After the many vicissitudes of fortune which had beset its brief career, and which had more than once grievously impaired its efficacy, the catastrophe seemed to be literally at hand. The meetings during the last term have been most unsatisfactory—that they were sparsely attended, was perhaps the least evil. It was a far more serious evil that the few who were present, whether in the capacity of members or of visitors, seemed to take the very smallest interest in the welfare and the objects of the Society. To attend a meeting simply because Jones is going to read a paper, and Jones is in your House or in your Form, may be a very intelligible but certainly is not a very laudable reason for attendance.

The real truth is that an institution like the Natural History Society can scarcely be expected to exist, still less can be expected to thrive, without the expenditure of a small amount of effort on the part of its adherents. Unless those who belong to such an institution are prepared to do something or are anxious to learn something, unless they are willing to support it from a higher motive than the gratification of an idle curiosity or the consumption of an idle hour, the whole affair must inevitably degenerate into a worthless absurdity. It was the conviction of this fact which led to the reorganization of the Society on a new footing. The rules for the new constitution will be found in their proper place. But it may be as well to give a brief outline of their substance.

The main work of the Society will hereafter be carried on by means of Sections; these sections will be under the general control of the President and the Society, but under the more special and immediate control of their

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respective heads. The head of each section will, at the beginning of each term, be guided in his management of the section by the number of its members and the quality of his material. He will be able to direct its labours into the channel which seems to him best adapted for its needs and capacities. He will have it in his power to take up again the threads which have been dropped on the preceding term, or to strike out into new paths. Sometimes he will consider it advisable to give lessons in the elementary branches of his subject. Sometimes he will be able to excite the interest of the members of his section by reading papers on subjects of a wider range. It is to be hoped that the other members of each section may be able before long to contribute some independent assistance to the work of the section. But the chief pledge that every member really feels the interest he professes to feel in the subject he has selected, will be found in the rule which makes the attendance at each meeting of the section compulsory.

If these regulations should seem to split up the Society into unconnected atoms, this evil will be obviated by the provision that there will be two general meetings of the Society in each term. At these meetings the attempt will be made to interest the members of the Society in the general sphere of Natural History which lies outside the range of their particular sections by the display of some of the numerous objects which at present are shrouded in the mysterious labyrinths of the cabinets and drawers of the Museum. The Field days, which have hitherto been one of the most pleasant and interesting features of the Society, will be continued during the summer months, and will give, as before, a wider scope to the labours of botanists and entomologists.

There is every reason to believe that the Society may on these conditions renew its youth, provided that the members are willing and anxious to do their part. It has done some work in the past: it still remains to be seen whether it cannot continue its labours with at least equal success in the future.

It only remains to make a few remarks upon the present Report. The papers from members, as may be concluded from the preceding remarks, are

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but few. Two other papers are printed, one by E. Meyrick, Esq., upon Tiger Moths, illustrated by a plate prepared by F. E. Hulme, Esq., F.L.S., and whose active interest in the Society we regret to say will cease in a great measure, owing to the fact of his having removed to a house further from the town. The other paper, on Sarsen Stones, written by Dr. Stevens, of St. Mary Bourne, Andover, was read before the Brighton and Sussex Natural History Society. Being on a subject which is, or ought to be of great interest to Marlburians, H. J. Verrall, an Old Marlburian, requested that it might be read before our Society, and printed in the Report. To this Dr. Stevens kindly gave his consent. It was ready for being read at one of our later meetings, but the state of the Society was such that no suitable opportunity occurred for reading it. The editors feel sure that its insertion will add much to the value of the present Report.

The various Lists of Notices are also scanty—that on Entomology alone being up to the mark. This has been prepared by E. Meyrick, Esq., who, though at Cambridge, has yet managed to send a respectable list. The Botanical Notices have been omitted entirely. There was no discovery of any great moment, and the long Tables of the weather, supplementary to the Botanical Tables in the previous Report, rendered it necessary to limit the size of the Report as far as possible.

The Ornithological collection has been very carefully attended to by Mr. Kent, under the directions of E. F. im Thurn, Esq. With this exception the various collections in the Museum have not been very materially altered or increased. The cases for the Antiquities are ready, and will probably be filled during the next term. A fossil tooth of an Elephant and other fossils have been presented by Rev. G. W. de Lisle. The Rev. J. M. Fuller still contributes "Science Gossip," and a few other donations from members of the Society are acknowledged in the notices of the proceedings at the various meetings. For these the Society here tenders its best thanks.

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LIST OF MEMBERS.

President:

Rev. T. A. Preston.

Secretary:

W. M. H. Milner.

Librarian:

W. M. Grove.

Committee:

The Ex-officio Members.
Rev. A. Babington.
S. F. Townsend.
F. G. Heaven.

Honorary Members:

Rev. G. G. Bradley, D.D.
F. E. Thompson, Esq.
W. E. Mullins, Esq.
C. M. Bull, Esq.
Rev J. F. Bright.
Rev. J. Sowerby.
Rev. C. W. Tayler.
Rev. A. Babington.
W. Fergus, Esq., M.D.
S. B. Dixon, Esq., F.G.S.
F. Storr, Esq.
W. H. Macdonald, Esq.
J. F. Duthie, Esq.
G. H. Dawson, Esq.
Rev. A. C. Almack.
E. F. im Thurn, Esq.
G. K. Mills, Esq.
W. Mansell, Esq.
Rev. G. W. de Lisle.
H. A. Evans, Esq.
Rev. J. W. Mills.
E. C. Sewell, Esq.
J. Walker, Esq., M.D.
D. E. Leighton, Esq.
W. W. Fowler, Esq.
M. H. Smith, Esq.
J. F. Cornish, Esq.
C. Sankey, Esq.
A. H. Beesly, Esq.
F. E. Hulme, Esq., F.L.S., F.S.A.
Capt. H. O. Bateman.
Rev. C. E. Thorpe
Rev. J. S. Thomas.
C. A. Sladen, Esq.
G. E. Manisty, Esq.
W. Koch, Esq.
Rev. F. W. Farrar, D.D. F.R.S.
W. P. Selliok, Esq.
H. C. Spry, Esq.
G. F. Rodwell, Esq.
W. D. Fenning, Esq.
W. D. Smith, Esq.
R. E. Price, Esq.
Capt. R. B. Reed.
H. J. Verrall, Esq.
H. M. Hamilton, Esq.
E. Meyrick, Esq.
C. W. Bourne, Esq.
H. D. Drury, Esq.

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Members:

R. W. Doyne.	R. A. Farrar	C. E. Fox.
A. P. Macgregor.	H. C. Legh.	T. C. L. Griffith.
E. Hunter.	A. W. Taylor.	G. A. Lefroy.
N. Whiting.	O. F. Jacson.	H. S. Philpot.
H. W. Thatcher.	C. Colville.	C. E. Blackett-Ord.
M. W. H. Milner.	C. F. P. Froome.	W. S. Robinson.
S. F. Townsend.	N. Manders.	J. C. Brown.
W. H. Williams.	F. G. Heaven.	J. N. Atkinson.
A. V. White.	A. D. Smithe.	R. Armitage.
A. W. Flux.	P. B. Smithe.	J. B. Kite.
T. G. Balfour.	D. E. Olivier.	P. L. Hesketh.
W. M. Grove.	A. H. Thurnam.	H. W. How.
A. E. Garrod.	W. G. Busk.	

Associates:

A. P. Wickham. A. C. Sim.

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RULES.

1.—That this Society be called the Marlborough College Natural History Society.

Constitution.

2.—That the Society consist of Members, Honorary Members, and Associates.

Officers.

3.—That the Officers of the Society consist of a President, Secretary, Librarian, and Curator.

Election of Officers.

4.—That the President have the absolute power of nominating the Secretary.

5.—That those Member, of the Committee, who are not ex-officio Members, be elected terminally, and that the retiring Members be eligible for re-election.

6.—That the same rule apply to the Librarian and Curator.

7.—That each candidate for election give in his name to the President, any time before the day of election.

8.—That all canvassing for votes by a Candidate, or by his friends with his knowledge, shall at once disqualify him for any election that term.

9.—That any Member canvassing for votes for a Candidate, or for a new rule, forfeit the right to vote on any occasion during that term.

10.—That the election of officers of the Society take place near the end of the term, but that they do not come into office till the beginning of the next term.

11.—That on the occurrence of any election, each Member of the Committee have double the number of votes of any other Member of the Society.

12.—That in the event of a vacancy occurring in the Committee or any other office to which Members are elected at the beginning of each term, the vacancy be filled up by the Committee.

13.—That eight Honorary Members have the power of debarring a candidate from standing for any office.

Management.

14.—That the affairs of the Society be conducted by a Committee, consisting of the President, Secretary, and three other Members of the Society, to be elected from and by Members of the Society; three of whom shall form a Quorum.

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President.

15.—That in case of an equality of votes, the President shall have a double or casting vote.

16.—That in the absence of the President, the Committee be empowered to request any Member of the Society to take the chair.

Secretary.

17.—That the duties of the Secretary be to keep a list of all the Members of the Society, and of all former Members and Benefactors who may wish to receive the Reports of the Society; to summon meetings (when necessary) of the Society; to keep a detailed report of the proceedings, as well as lists of Members and Visitors present at each meeting, and generally to act under the direction of the Committee in all matters connected with the welfare of the Society.

18.—That in the absence of the Secretary from any meeting of the Society, minutes of the proceedings be taken by a Member of the Committee, appointed by the President.

Librarian.

19.—That the duties of the Librarian be to keep a catalogue of the Library, with the names of the Donors, and to see that the Library Regulations are carried into effect.

Curator.

20.—That the Curator be responsible for the order of the Museum, and when necessary assist the Secretary in the distribution of the Reports of the Society.

Library.

21.—That any Member of the Society be at liberty to consult any of the books belonging to the Society, but that only certain volumes, to be decided on by the Committee, be allowed to be taken from the room.

22.—That if any nember wishes to take a volume from the Museum, he shall give his name, and the name of the book, to the Librarian, who shall enter them in the book kept for the purpose.

23.—That every volume so taken out be returned by the end of the term, but that no book be kept more than one month.

24.—That if any volume be damaged, such damage shall be reported by the Librarian to the Committee, who shall decide upon any further proceeding in the matter.

Museum.

25.—That any member of the School, who is not a Member of the Society, be allowed access to the Museum at such times as it is open to Members of the Society generally, provided he first obtain leave from the President, which leave shall be renewed every term, but may be taken away at any time, if the privileges be abused in any manner.

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26.—That members of the Society be permitted to use the Museum at such hours as the Committee shall appoint; but that in the afternoon it be used exclusively for the purposes of Natural History.

Botanical Garden.

27.—That the Garden be under complete control of the President, or of some person appointed by the President.

28.—That the Garden be open to Members of the Society, at all times, and that each Member be allowed to introduce one visitor.

29.—That any Member on application to the President can have the charge of a bed.

30.—That no plants be put in without special leave from the President.

31.—That Members may keep any plants of their own in such places as the President shall appoint, as long as the ground is not required.

32.—That the Society's flowers may not be picked.

33.—That Members may gather from their own plants, but may not depute others to do so.

Field Days.

34.—That the Field Days be confined *entirely* to Members of the Society, and that the President appoint a day on which names must be given in.

35.—That any member, who has given in his name, must pay his share of the expenses, unless he is *unavoidably* prevented from going, in which case he must give notice at least three hours before the time of starting.

Members.

36.—That the election of new members rest entirely with the Committee.

37.—That every Member pay a terminal subscription of 2s., to be paid at the first meeting of the Society in that term.

38.—That if a member be elected after the commencement of the term, the amount of his subscription for that term shall be settled by the Committee.

39.—That Members have the right to be present, to state their opinions, and to vote at all general meetings of the Society; to introduce two visitors at all general meetings of the Society; to have personal access to the Museum, and to introduce a visitor at such times, as shall seem fit to the Committee.

40.—That members be considered as Probationary Members for the first term after their election.

Honorary Members.

41.—That Honorary Members have all the privileges of Members, except the power of introducing a Member of the School to the meetings of the Society.

42.—That Honorary Members pay 5s. a half-year, for which they shall be entitled to a copy of the Report.

43.—That Honorary Members may compound for all future subscriptions by the payment of a sum of two guineas.

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Associates.

44.—That Associates be confined to members of the VIth and Upper Vth Forms; that they pay 1s. a term, and be entitled to the use of the Museum, and to attend the meetings of the Society whenever they think fit, but shall not be entitled to vote on any question, to introduce a visitor, or to take books out of the Museum.

Visitors.

45.—That on such occasions when the number of those who wish to be present as visitors at the general meetings of the Society is greater than the number of Members who attend, the President and Committee shall be empowered to admit three or more each, as shall seem fit.

Suspension of Members.

46.—That any Member be liable to be excluded from the Society by the Committee, if, in their opinion, he shall have failed to show sufficient energy in the working of the Society.

Sections.

47.—That the Society consist of sections to be formed for the more accurate study of the different branches of Natural History, and that every Member must belong to a Section.

48.—That the question of the number of Sections be left open for settlement at the beginning of each term.

49.—That no one may leave one Section for another during the term.

50.—That there shall be a definite number of Meetings of each Section during each Term, the number and days of meeting to be settled at a general meeting of the Society, to be held for that purpose at the beginning of each Term.

51.—That attendance of all members (except those of the VI. Form) be compulsory at all the meetings of any Section to which they belong.

52.—That the Sectional meetings be open to any other members of the Society; or of the School, on application to the Heads of the Sections.

53.—That the internal control of the proceedings at each Sectional meeting be entirely in the hands of the Head of that Section.

54.—That the Heads of Sections be appointed for each Term by the Committee.

Meetings.

55.—That there be two general meetings of the Society each Term, exclusive of the general preliminary meeting.

New Rules.

56.—That any Member of the Society have power to propose any new rule or any alteration in an old one, provided the motion be seconded by another Member.

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MEETING HELD SEPTEMBER 26TH, 1873.

After a few remarks from the President, the Secretary announced that A. H. Thurnam and D. E. Olivier had been elected probationary members of the Society, and exhibited a specimen of Cinnabar from the quicksilver mines at Idria, which he presented to the Society. G. H. Dawson, Esq. presented a specimen of the Water Ouzel, and made some remarks about members high in in the School joining the Society. T. G. Balfour exhibited some Wood from the fossil forest at Cairo; D. E. Olivier a pair of Sandals from Japan; and A. W. Flux a specimen of Roman Pavement from Chedworth, an Opium Pipe, and some Coins.

There were 23 persons present, 3 Hon. Members, 14 Members, and 6 Visitors.

MEETING HELD OCTOBER 10TH, 1873.

G. H. Dawson, Esq. (who occupied the chair in the early part of the meeting) announced that A. G. Busk had been elected a probationary member, and that H. E. Glyn, J. H. Sanderson, and H. S. Smith had resigned membership. After the paper on "The Etymology of the Street Names of London," by W. M. H. Milner, the President passed round—on behalf of W. E. Mullins, Esq.—an account and figure of a Melon-cucumber, and of a remarkable fungus; and on behalf of H. J. C. Smelt some Tesselated Pavement and Bricks from Chedworth. W. M. H. Milner exhibited some coins from Rome; A. E. Garrod a fine Bunch of Barnacles *(Lepas anatifera)*, which he presented to the Society; and T. G. Balfour a relic from the burning of Paris.

It was then decided by vote that the meetings should be held weekly for the present.

There were 32 persons present, 3 Hon. Members, 14 Members, and 15 Visitors.

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ETYMOLOGY OF THE LONDON STREETS.

THE history of many cities has been deciphered from inscriptions, and so the history of Old London may, to a great extent, be deciphered from the inscriptions which we find written up at the corners of its streets. These familiar names, which catch the eye as we walk along, perpetually remind us of the London of bygone times. By the aid of the street names of London let us endeavour then to make out its history—beginning by going round the old city walls.

The ancient wall began at the Tower of London, and ran to Aldgate—"the Old Gate." Through Bishopsgate the Bishop of London used to ride on his way to hunt in his woods at Stepney. Between Aldgate and Bishopsgate the wall was protected by an open ditch, 200 feet broad, whose name—Hound's-ditch—sufficiently indicates the unsavoury nature of its contents.

Camomile-Street and Wormwood-Street remind us of a desolate strip of waste ground, which lay immediately within the wall, and of the hardy herbs which covered it. On the great fen or moor which protected the north side of London, and just outside the wall, was the Artillery ground, where the Bowmen were wont to assemble to display their skill. (The word Artillery, in old English, denotes bows and arrows, which meaning it retained till the 17th century.) Where the fen ended the wall wanted more protection, and here accordingly we find the site of the Barbican, one of the gateway towers. Passing by Newgate we come to the Old Bailey, a name which is derived from the *ballium*, or *vallum*, an open space between the line of the outer wall and the advanced gate of the city. (A bail is—etymologically—a palisade; thus the bails at cricket were originally the stumps, the present restricted meaning being of later origin. The Roman *vallum*, and the English *wall*, are —etymologically—stockades; so also is Bally, the commonest prefix in Irish village names). The river Fleet gave its name to the street which crossed it at right angles, and entered the city at Fleet-gate. Flood-gate, or Ludgate, a Norman fortress erected at the same time as the Tower, stood at the angle formed by the wall and the Thames; a wharf which occupies the site still retains the name of Castle Baynard, though every vestige of a fortress has long ago disappeared. Dowgate and Billingsgate were two of the passages through that part of the wall which protected the city from assailants coming from the river side.

For a long period London was confined within the limit of its walls. In the reign of Edward I. Charing was a country village lying midway between the two cities of London and Westminster, and St Martin's-in-the-fields long continued to be the village church. Long Acre, formerly a field called "The

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Elms," or "The Seven Acres," was not built upon till the reign of Charles I. If, two or three centuries ago, what now forms the heart of London was unbuilt upon, it was at a still more recent period that Kensington, Brompton, Paddington, and Islington, remained detached country villages. In the fields of the outlying villages the citizens could take pleasant country walks with their wives, while their children clambered over Goodman's style, in Goodman's Fields, to drink fresh milk from Farmer Goodman's cows, or on rare occasions went nutting on Notting Hill. In Windmill-Street, Finsbury, there was a windmill built on the top of a large mound composed of bones and earth which had been carted from the churchyard of Old St. Paul's; there was another windmill in Windmill-street, at the top of the Haymarket; and there was a watermill in Milford-Lane, Strand. In Tothill Fields there was a bear garden, and the hounds of the Lord Mayor's pack were kennelled at Doghouse Bar in the City Road. In the fields by the side of the brook, which has given its name to Brook-Street, an annual fair was held. On the site of Curzon-Street and Hertford-Street, a rural fete, whose memory is preserved in the name of the fashionable region of Mayfair.

MEETING HELD OCTOBER 17TH, 1873.

In the absence of the President the chair was taken by the Secretary.

T. G. Balfour read a paper on "The Lighthouses of the Ancients."

W. M. H. Milner exhibited some coins, including one of Alexander the Great; T. G. Balfour a piece of auriferous quartz, from Australia; R. A. Farrar an "Ordeal Bean," from Africa; C. E. Fox some English Coins; and C. Colville some Moorish Coins.

There were 39 persons present; 20 Members, and 19 Visitors.

THE LIGHT-HOUSES OF THE ANCIENTS.

We are apt to look upon the light-house as completely a modern invention, but a little reflection would convince us that the early navigators, in their arduous struggle against the ocean, could not have failed to establish some sure indications by which to guide their adventurous course. Undoubtedly, the first rude signal would be no more than a huge fire, blazing on the wave-washed promontory, or on the summit of a hoary hill or grassy mound nearest the most dangerous part of the shore. But it can be easily conceived that the difficulty of keeping these fires alight on stormy nights

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would soon suggest to man's ingenuity the idea of erecting a suitable structure to shelter the flame.

The value of this kind of coast defences was so apparent that the ancients felt unable to ascribe them to simple human discovery. And thus the Greeks attributed their origin to the demigod Hercules. But there seems some reason to believe that, long before Greece became a maritime nation, light towers had been built by the Libyans and the Cuthites along the coast line of Lower Egypt. These towers, we are told, served as landmarks during the day, and as beacons during the night.

Their purpose was a holy one, and accordingly they were used as temples, and each was dedicated to some divinity. The mariner, who naturally held them in great veneration, enriched them with his votive offerings. It has been conjectured that their walls were at first painted with charts of the coast and of the Nile; and at a later period were transferred to papyrus instead, and hence that was the origin of our maps. The priests of these remarkable, but invaluable, institutions also taught the arts of hydrography and pilotage, as well as that of steering a vessel by aid of the stars. On the summit of each tower a fire was kept burning all night; the fire being placed in a sort of bronze or iron cradle, composed of three or four branches, each representing a dolphin or some marine animal, all being bound together by some skilful ornamental work. This machine was fastened to the end of a stout pole, and so placed that its radiance was directed seaward.

According to the Baron de Zach the Libyan name for these towers was tar or tor, which latter is the celtic for a height, which is used in the tors or granite hills of Dartmoor and Devonshire. As "is" means fire, we thus get tor-is, or fire-tower, whence the τύρρις; and the *Latin* turris or "fire-tower." In like manner the Latin columna comes it is said from "Col-on," the pillar of the sun.

Some authorities boldly carry this etymological diversion a little further. When the fire-towers were placed upon heights outside the walls of cities and built in a circular form, they were called Tith. The mythological Tithonus so celebrated for his longevity, seems, they assert, to have been one of these edifices dedicated to the sun, and Thetis, the ancient sea goddess, simply a fire-tower near the sea called Thit-is. Nor have ingenious theorists been wanting to maintain that the destruction of the Cyclops by Apollo's arrows was nothing but a poetical account of how the fires on the Cyclopean towers, erected on the east coast of Sicily, were extinguished by the rays of the rising sun.

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The impression which the light-tower produced on the popular imagination is, however, more beautifully, as well as more certainly described by Homer in the 19th Book of the Iliad.

"As to seamen o'er the wave is borne.
The watch fire's light, which high among the hills,
Some shepherd kindles in his lonely fold."

The first pharos that performed its duties in a regular manner seems to have been that which Lesches, who wrote the Little Iliad, and lived about 740 B.C., erected on the promontory of Sigeum at the entrance of the Hellespont.

Though the most ancient in our records, the honour of bequeathing its name to its successors was not reserved to it, any more than to Columbus the glory of leaving his name to the new world. This honour was gained by the immense tower built on the island of Pharos, near Alexandria at the mouth of the Nile; and on which model several of the most celebrated modern light-houses have been built. Such was the case with several on the Italian coast, among these, notably that which blazed forth from the mole at Messina over the whirlpool of Charybdis and the rock of Scilla, and that which shone in the Island of Capræ and was destroyed by an earthquake shortly before the death of the Emperor Tiberius Cæsar.

Strabo refers in exaggerated terms to a superb pharos of stone at Capio or Apio, built on a rocky headland, to guide vessels through the shallow channels at the mouth of the Guadalquiver.

What the shape of the Roman light-towers was is not very easily to be found out, when we remember that Herodian compares them to the catafalques or canopies of the Roman Emperors, which were square; but it is certain that quadrangular light-houses were very seldom constructed. On ancient medals and coins the general shape is a round tower, topped by another smaller one, to about three or four stories in height.

One of the most celebrated lighthouses of antiquity, as has just been stated, was that of Alexandria, which ancient writers included among the seven wonders of the world. It might naturally be supposed that the founder of so wonderful a monument of architectural skill would be well known; yet it is attributed severally to Ptolemy Philadelphus, one of the wisest and best of the Egyptian kings, to Cleopatra, and even to Alexander the Great, which last is impossible as the lighthouse was not built till after his death. All that can be with certainty affirmed is, that the architect's name was Sostrates. The following legend is given to account for our honouring only the architect's name and not that of the founder. Our ignorance it is said is owing to the knavery of Sostratus. He wishing that only his name should be known, and not that of the founder, in connexion with it, cut deep into the wall of it the following

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inscription "Sostratus of Cnidos, the son of Dexiphanes, to the gods who protect those who are upon the sea." Then thinking the founder might perhaps object to this inscription, ignoring him so completely as it did, Sostratus covered it with a light coat of cement, on which he wrote the founder's name. In a few years, as Sostratus had expected, the cement and inscription on it disappeared, from the action of the atmosphere, and the inscription on the stone appeared.

Pliny says Ptolemæus out of the modesty and greatness of his soul desired the name of the architect only to be engraved on the tower and no mention of himself to be made. This however seems highly incredible.

To solve the difficulty Ptolemæus Soter is represented as the founder. But as Edrisi, an Arabian writer of the twelfth century, says "God alone knows what is the truth."

This famous lighthouse stood on a kind of peninsular rock at the east end of the island of Pharos, and as it was built of white stone and rose to a great height it must have been a most conspicuous object to steer by.

Some remarkable discrepancies occur in the accounts of this noble edifice, which have been handed down to us, but after all allowance has been made for error and exaggeration, it remains obvious that the wondering admiration bestowed upon it by the ancients was not unjustified. The statements however of the distances from which its light could be seen, are, however, most undeniably fictitious. That of Josephus is the least incredible; yet even he asserts it could be seen 34 Egyptian miles off at sea. Such a range for a lighthouse on the low shore of Egypt would require, according to the best authorities, a tower 550 ft. high. According to Pliny a sum equal to £390,000 was spent on its construction, and if this were true, we might be able to believe some of the accounts of its size. But the fact that it has entirely disappeared seems to disprove the dimensions assigned to it.

From observations with regard to its light made by different writers it seems to have had a more complete lighting apparatus than is generally supposed. Thus Pliny expresses a fear lest its light should be mistaken for a star from its steadiness, but he could not have spoken thus of the flickering light of a fire. This catastrophe, viz,—mistaking a lighthouse light for a star, has happened even in quite recent times, so that many lighthouses show also a light near their bottom to prevent that mistake.

With regard to its destruction, that seems to have taken place by degrees during the 13th and 14th centuries, and to have been hastened or completed by the barbarian and destructive hands of the Turkish conquerors of Egypt.

In reference to the Alexandrian pharos, the stories of the Arabs and European travellers must be very cautiously examined. Thus we are told that

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its foundations were laid on four huge crabfish made of glass. Nor is the following story more credible, viz, that Alexander the Great fixed on the summit of the tower a mirror so skilfully made that it could reveal a fleet 300 miles off, and that after the Macedonian hero's death it was broken by a Greek, named Soclores, while the keepers of the lighthouse were asleep. But unfortunately for this romantic fiction, the pharos was not built till after Alexander's death.

MEETING HELD OCTOBER 24TH, 1873.

D. E. Olivier read a paper on "The Structure and Growth of Plants," illustrated by some models.

W. M. H. Milner exhibited, on behalf of T. G. Balfour, a ring made of Elephant's Hair, from Ceylon, and a sand concretion from Maryborough.

The President then exhibited and described some of the Chalk Fossils in the Society's collection.

There were 28 persons present, 2 Hon. Members, 10 Members, and 16 Visitors.

MEETING HELD OCTOBER 30TH, 1873.

G. F. Rodwell, Esq., read a paper on the "History of Alchemy."

There was no time for any exhibitions.

There were 38 persons present, 3 Hon. Members, 17 Members, and 18 Visitors.

MEETING HELD NOVEMBER 7TH, 1873.

A. E. Garrod read a paper on "The Marvels of Pond Life," illustrated by means of several microscopes.

There were 22 persons present, 2 Hon. Members, 11 Members, and 9 Visitors.

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MEETING HELD NOVEMBER 21ST, 1873.

The chair was taken by Rev. A. Babington, but as hardly anything was done, the meeting very soon adjourned.

There were 20 persons present; 1 Hon. Member, 14 Members, and 5 Visitors.

It now became a question whether the Society should not be dissolved, as but little apparent interest was shown in its welfare by the majority of the members. When this fact became more generally known, several Masters and members of the VI. Form came forward and volunteered to exert themselves in putting matters on a firmer basis. Several discussions were held, and it was finally decided that every member must belong to a section, ; that each section should meet a definite number of times every term; and that the attendance of members at the meetings of his section or sections be compulsory. By these means each member will have to do a certain amount of work, and his particular attention would be directed to a *few* subjects, as the compulsory attendance at the sectional meetings would act as a bar to his joining more than one section. This will not prevent his attending other sectional meetings, if he has the time to do so; and it was therefore decided that all sectional meetings should be open to members of the Society, and also to members of the School (who are not members of the Society) upon application to the heads of the sections. It was also decided that the Field Days be confined entirely to members of the Society.

These rules were passed at a meeting of the Society held on the 5th of December, when it was also decided that there should be only two general meetings of the Society every term, besides the preliminary general meeting to settle about the sections, and

1.—That the President nominate the Secretary, the three other members of the Committee being elected by the Society generally.

2.—That the Museum be open at such times as the Committee shall appoint, when members may use it as a reading room, except in the afternoons, when it must be used exclusively for the purposes of Natural History.

At a subsequent meeting the following were elected as Officers of the Society for the ensuing term:—

G. A. Lefroy, nominated Secretary by the President.

Rev. A. Babington, H. S. Philpot, and J. N. Atkinson—on the Committee.

R. W. Doyne, Curator.

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SARSENS, GREYWETHERS, OR DRUID STONES.

DEFINITION.

Throughout the western chalk districts of England, and following more or less the lines marked out by the middle and lower series of the Tertiary Eocenes, masses of stone have been observed; in some places profusely scattered, and of huge dimensions, in others sparingly so, and of comparatively insignificant size. They have been invested with the above appellations, easy of explanation as regards the two latter titles, but hardly so when we come to the word Sarsen, a term which has called forth many attempted definitions, not one of which perhaps can be considered as furnishing a satisfactory solution. Aubrey, one of the early historians of Wiltshire, writes of them under the head of Sarsden, or Sarsdon stones; and considers that "the name owes its origin to a village near Andover, called Sarsden,—*i.e.*, *Csars dene*, perhaps *don*; Cæsar's-dene, Cæsar's-plaine, now Salisbury plain." This is but a lame attempt on the part of this great observer; and the derivation from *Saracen* hardly merits acceptance, although endorsed by a writer in *Notes and Queries*. "The Saxons applied the term *Saracen* to Pagans or heathens in general; and as the principal specimens of these stones were found congregated together as temples, popularly attributed to heathen worship, it naturally came to pass that the whole formation acquired the distinctive appellation of Saracen or heathen stones; that is to say, after the conversion of the Saxons to Christianity." Again, the Latin *Saxum* has been suggested as fixed to them in Roman times, subsequently corrupted to *Sarsen* by the Romanized Britons. Another derivation has been found in the Anglo-Saxon *sel-stan*, great stone, the prefix *sel* being sometimes employed in *Saxon* topography for great, as in *Selwood*. One other solution may be attempted in the Saxon *ses*, a stone, the plural of which, *sessan*, comes very near to säsen or sassen the name by which they pass current among the Berkshire rustics. In the Saxon *sesse*, a seat, we are reminded of the stone settles used in former times in Church porches, and at inn doors for the accommodation of travellers; and such relics are still in vogue for village purposes in some of the Berkshire hamlets.

We have an easier task in the word Greywether, which has evidently obtained its origin in the resemblance these stones bear to sheep when distantly seen in scattered lines upon the downs. No object more readily takes the eye of the traveller over the Marlborough hills east of Hackpen, or the bold

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hills about Pewsey and Clatford than those remarkable stone drifts winding up the centre of the main valleys and along the smaller tributaries. As the stones all trend in the same direction, they have the appearance of a stream of rocks even yet moving onwards. In some places the singular manner in which they lie hurled as it were at random over each other looks as if they had formed the *debris* of an overwhelming avalanche. Again the traveller meets with them huddled one over another like the fallen ruins of some Cyclopean temple, or in scattered blocks as if thrown broad-cast over the Downs. To the uninitiated how some of these isolated monoliths reached their present resting places must verily form a subject for wonder!

"The heart.
Aching with thoughts of human littleness
Asks, without hope of knowing, whose the strength
That poised thee here."

Tinted over with lichens, and toned down by time so as to form a happy correspondence with the grey turf on which the lie half embedded, the Greywethers present a picture of mellowed beauty. They stand as a memorial of stratifications, such as the Bagshot sand, that once covered the districts where they are found, but which have long since been swept away.

Druid stone refers to the Celtic monuments, standing in detached places, constructed with these sandstone blocks. Their association with the ancient British people, and the Druidical rites supposed to have been conducted within those mystic circles having evidently furnished the appellation.

DISTRIBUTION.

The space over which we may expect to find these sandstone concretions may be said to comprehend a triangular patch on the world's surface, its apex resting in North Wiltshire, and its base on the German ocean—from Margate to Lowestoft. Lying along its north and south flanks are bold hills of chalk, which probably overlooked this Tertiary area during the Glacial epoch, when their bases were washed by the waves of a surging sea.

This ocean had then a far different geographical area; the cretaceous hills of Hants, Wilts, and Dorset flanked it on the North. Its Southern border, now mostly denuded away by sea action, was continuous with the chalk of the Dorchester hills, which passed as an unbroken line through the present Purbeck, and the Isle of Wight; and eastward stretched away to join the Sussex chalk; and away South and east forming the north-west extension of the chalk in north western France. This sea had a system of rivers pouring into it from the loftier chalk ranges, one of which, a large central stream running eastward from the west, at an early date, opened out below Selsea; and subsequently the intervening chalk, and other strata blocking the way between the Isle of Wight and Swanage were eaten through by the sea without

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and the streams within, and the present Solent entered the breach, forming an opening with the sea flowing without. The south margin of the ancient estuary is still marked out to us by the isolated landmarks known as the Needles on the one hand, and Handfast Point and "Old Harry and his wife" on the other.

Looking over the Berkshire area, it will be observed that the Kennet extends from the Marlborough Downs, eastward, and joins the older and more voluminous Thames river at Reading, this same Thames eating its way from North and west through the lower stratifications of the great Tertiary plane of marine denudation. It is in the western extremity of the basin, and extending for miles over an area west of Marlborough, and away northwards towards Swindon that the Sarsens chiefly abound. So thickly are they spread over miles of country that the traveller might almost leap from stone to stone without touching the earth. Their distribution in places, nevertheless, appears somewhat patchy, rendering it difficult to determine for what reason in the same district one slope of a valley should be strewn with them, another left bare. Thus while the west slope of Piggle Dean valley is largely strewn with them the east one is left bare. On Overton Down again they lie chiefly on the east rise of the vale. Near Broughton copse, in the next valley, they are very profuse; and running away northward towards Toller Down they lie but sparingly on the Plastic clay. On the same Tertiary outlier, at Hackpen, they extend along the surface; and in the valleys, east of Hackpen, on the Upper Chalk, they occur in quantities. North of Pewsey Vale they thickly strew the valleys; while on the high downs of the Upper Chalk, north east of Ogbourne St. Andrew, they are sparsely scattered. Further northward they occupy the elevated slopes on the Aldbourn and Lambourn downs, the ground in the immediate neighbourhood of Lord Craven's Park being so regularly spread with them, as to have led to the Archæological opinion that they must have been placed there by human interference.

Following the line of the Kennet valley Greywethers repeatedly occur in the Brickearths, and are quarried for building purposes. At Langley Park, near Newbury, masses great and small are embedded in a form of iron-sand, and from their unworn condition they evidently rest where they were originally consolidated. Conglomerates of a very different composition are also observed in places, as at Standen, near Hungerford, where the pebble-beds contain masses of "Pudding-stone." Rounded flint-pebbles, and angular flints embedded in a base of ferruginous grit likewise occur among the Kennet valley conglomerates. Under favourable circumstances the Pudding-stone accretions are very common, as in Hertfordshire, where the sand of the Reading beds are largely charged with flint pebbles.

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As the Lower Eocenes are sparingly present in North Hampshire Sarsens are rarely found there; although small drifted specimens of saccharoid sandstone occasionally turn up in the deep clays; and in two instances this material was found to have been used by the early Britons to form handmills for crushing grain. Lower down south Lieut. Col. Nicolls records the observing blocks of stone in the Tertiary gravels, near Southampton. Greywethers further occur in the western area of the Tertiary basin in Dorset; and along the eastern area in many parts of Sussex; and near Dieppe they stretch away in a continuous line for many a league. In short, such concretions are to be looked for wherever the Lower Tertiaries have found a footing.

ORIGIN AND STRUCTURE.

Various theories have come from different authorities regarding the origin of Sarsens, some of which are simply amusing, others interesting and ingenious. The view held by the rustic population of the districts where they prevail is that they grew. Stukely broached the singular theory that, "as the chalky matter hardened at Creation, it spewed out the most solid body of the stones, of greater specific gravity than itself; and assisted by the centrifuge power, owing to the rotation of the globe on its axis, threw them upon the surface where they now lie."

A writer in Archæologia, 87 years ago, attempted to account for them by the explosion of an earthquake, which scattered them over the Downs.

Mr. Prestwich has pointed out that the evidence is in favour of these saccharoid rocks having been derived from the mottled clays and sands overlying the Chalk, known as the Plastic clay, from the Woolwich and Reading series, and bases his conclusions mainly on the fact that the sands of these beds are of precisely the same mineral character as the blocks themselves—the concretory stone representing, in each case, the component part of some portion of the Woolwich and Reading Series. He further writes that although "it is very rarely that solidified portions of the strata are found *in situ*, still in the Western part of the London Tertiary district the middle division of the Lower Tertiaries always contains more or less extensive beds of quartzose sand, with patches or layers of pebbles in the lower part more especially of the group, while patches of sub-angular flints are also occasionally met with; consequently we have the elements necessary to produce the required results, whenever circumstances, as might easily happen, occurred to consolidate the materials." In accordance with this view we find that wherever the stones are most numerous, there the nearest Tertiary strata, although unconsolidated, assume a similar sandy or pebbly character. The patchy distribution of the Greywethers around Tertiary areas is thus somewhat accounted for, since where they do not occur we may suppose, that though the chalk had there also

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its coating of Tertiaries, yet these strata did not there contain the materials by the consolidation of which Sarsens were formed.

Mr. Whitaker advances the opinion, evidently based on sound observations, that the sandstone masses, lying on the Downs west of Marlborough, owe their origin to the Bagshot sand, this sand having rested on the chalk of that district, whither it extended beyond the London clay, which clay thins off to nothing near Marlborough. In further evidence he has found these sandstones resting on the London clay, which intervenes between the Bagshot sand and the Woolwich and Reading beds. It is remarkable that on this outside edge the Sarsens largely predominate; and Mr. Whitaker's views are further strengthened in the fact that the blocks contain no fossils, whereas the underlying beds being in some cases fossiliferous, it is likely fossils would occasionally be found in them if formed wholly from these. At the same time he coincides with Mr. Prestwich that some of these conglomerates are referable to the Plastic clay. Indeed he has been led to consider that, in some districts in the London Basin, these loose blocks may have come from various beds; and that their origin may be traced to the Reading beds, as well as to the London clay and Bagshot sand.

The original idea that the Greywethers of the Wiltshire Downs are due to the Bagshots does not, however, rest with Mr. Whitaker, inasmuch as Smith, the parent of English geology, long ago advanced the opinion that an extensive stratum of sand, containing these stones, once overspread the chalk of North Wiltshire.

Although no fossils have been observed in the Greywethers, some peculiar root-like holes have the appearance of having come from marine plants. Their surfaces are in some instances pitted with basin-like hollows, somewhat resembling the depressions made in rocks along sea shores, perhaps by the friction against pebbles lashed into motion by the waves. From the uniformity of structure in the Wiltshire Sarsens it would seem as if they must be the fragmentary remains of a continuous stratum that once had a wide range; but there can be no doubt that, in most instances, they have been agglutinated in separate blocks, much as we now find them. Many of them are angular and unrolled, and have evidently not travelled far from the spots where they lie embedded. They are further agglutinated together in nodules of all sizes, and of greater or less hardness. And the variety of material out of which, as we have already noticed, the Kennet conglomerates are constructed,—in some instances worn or unworn flints, in others pebbles, forming pudding-stone, in others again fine ferruginous grit—evidently serves to show that, under favourable conditions, almost any material formed the rough substance of the stones, when brought in contact with the cementing material. The finer sandstones, recently taken from their sandy beds, are not unusually coated with imperfectly solidified sand, merging into the character of the parent blocks,

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the process of accretion seeming to be the gathering together of the siliceous particles around the surface of the stones.

There are considerable differences in the chemical constitution of these consolidations. Mr. Maw, in writing of such concretions found in the drift of Suffolk, states that the hardest nodules were resolvable into sand by the action of hydrochloric acid, which implied that the cementing material was calcareous; and one block was found to contain only a little lime in the shape of silicate. The Sarsens of Wiltshire have been found to be composed of very pure silex; their structure consisting of siliceous sand, agglutinated by a siliceous cement. They contain no carbonate of lime, and the trace of peroxide of iron found in them is due probably to the infiltration of ferruginous particles from the neighbouring soil, as the iron does not penetrate beyond the exterior of the stones, the interior being generally quite white. There appears to be a total absence of saline matter. The weight per cubic foot is 154lbs. Those bearing this composition are the most durable, and examples of such are forming at the present day around our western coasts, where hills of blown sand prevail, precisely as the Sarsens were formed from the Bagshots. The water filtering through the upper layers dissolves the silica, lime, or iron, which passing down through the lower stratum, and by the mechanical power of surface as shown in porous bodies, they become separated and form the cementing materials.

Referring to the conditions that must have introduced the excavation of the valleys, chiefly as bearing on the distribution of the Sarsens, there are good grounds for believing that the drifting of these stones is coeval with the formation of those widely extended patches of deposits, called "Brickearths," which have resulted from the breaking up of the older Eocenes. These drifts have received able exposition at the hands of Mr. Whitaker; and although many oscillations of level have taken place since their deposition, and considerable modifications of climate, there is very little doubt that the Brickearths, of which the oldest may be considered as among the earliest of the Post-pliocene deposits, were laid down at the close of the Glacial epoch, at the time when the valleys were eroding, and the face of the land about to be made to assume its present contour. The changes that then occurred might almost be described in the lines of Milton—

> Wave rolling after wave, where way they found;
> If steep with torrent rapture; if through plain,
> Soft ebbing; nor withstood them rock or hill,
> But they or underground, or circuit wide
> With serpent error wand'ring found their way,
> And on the washy ooze deep channels wore."

A good deal of the high-level country in the Kennet district is covered with unstratified materials, composed of reddish clay, largely mixed up with

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rude angular chalk-flints. This deposit is called Clay-with-flints. It varies in depth from one or two feet to twenty or more; and to its presence we are indebted for the fine timber, and the dense woods that help to give variety to the Berkshire scenery. Very commonly on the upper part of the Clay-with-flints another clay appears, which has been denominated Brickearth. This earth varies greatly in colour, and is more or less sandy. Frequently blocks of Sarsen-stone may be seen lying at the bottom of the Brickearth on the Clay-with-flints, or mingled with the Brickearth. These beds occur on the hills or upper slopes of valleys, implying that the valleys deepened after their deposition. And further they are always observed on the Upper Chalk, or Chalk containing flints; and no fossils have been found in them, excepting such as come from the flints or chalk.

The reason for this local distribution appears to be that the Lower Chalk forms chiefly the higher escarpments, and the Upper Cretaceous deposit the widely extended table-lands, on which the materials washed down from the higher ground could more readily have become massed.

Although the higher-level Brickearths must have begun forming at a very early date, similar accumulations have been gradually depositing up to recent times, and are taking place at the present day, for wherever percolating water has made fissures in the chalk, such "swallow-holes" have gradually become filled with clayey and sandy materials, constituting a kind of "rain-wash Brickearth." And in addition, low-level Brickearths overlie the valley gravels, known as the "Mammalian drift," from the presence in it of bones of Hippopotamus, Rhinoceros, Elephant, &c., deposited at the time the gravels were laid down. Such drifts overspread most of the narrow valleys intersecting the undulating chalk-downs of Wiltshire.

In accounting for the presence of the elevated Brickearths it will be necessary to consider that at an early date, the stratified Eocenes, of enormous thickness in places, occupied an Arctic sea, or rather two small inland seas, for such the London and Hampshire basins may be considered; and that by exposure to rapid currents, tides, and ice-floes, a large portion of the strata became denuded, leaving, as the waters shallowed by a gradual rising of the land, an approximately level surface, over which extended wide flats of gravel, banks of sand, occasional beds of loam, Sarsen-stones, and various amorphous matters, leaving bare in places the Bagshot sand, London clay, or Woolwich beds, as standing memorials of the wreck to which the Tertiaries had been exposed. This was succeeded by the scooping out of holes and pipes in the under-lying chalk, which Sir C. Lyell and Mr. Prestwich consider must be due to the solution and carrying away of the chalky material by water, charged with carbonic acid, derived from the decomposition of the vegetable matter, which must have largely

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overlaid the surface. This process continuing, would in time be the means of removing immense masses of the chalk, the calcified water filtering down and escaping through the cracks and joints of the porous chalk.

As the swallow-holes slowly formed the clay subsided into them, and mingling with the chalk-flints, the whole graduated to the bottom, and formed the Clay-with-flints. Sarsens also sunk into the holes; and the unappropriated clay which capped the beds constituted the Brickearth. Green and black-coated flints are often observed at the bases of these beds; and these jointly with the peculiar tints of the Brickearth have sometimes caused these deposits to be mistaken for the true Plastic clay. The chalk surrounding these beds is usually much changed in character and colour, and long straggling pipes and cracks, in some cases not thicker than a knife-blade, ramify through the chalk, and are infiltrated with fine clay, or sand soaked in with water. While the sand-pipes were thus forming the surface sand, clay, and other materials had become slowly eaten away in places, leaving the superincumbent chalk to the attack of the frost, rain, snow, and tempest, which tracked the footsteps of the fierce sub-arctic tides and currents, the flood-waters cutting out channels for themselves along the lines of least resistance, and thereby outlining the winding valleys so picturesque and characteristic of chalk districts. These persistent agents continuing their operations, the valleys gradually deepened; and the Sarsens dropping down as the chalk was swept away, finally found their present resting-places.

It has often been conjectured that the blocks were transported from great distances by glacial agency; but there are no sufficient grounds for such an opinion, inasmuch as the stones are all of one local formation; whereas far travelled ice-borne boulders would most likely include rocks of very diverse kinds. It is quite probable, however, that ground-ice might have been an agent in transporting some of the larger masses for considerable distances along the valleys. Indeed the abrupt escarpments on some of the hill sides, in the course of the chalk-valleys, so different in aspect to the ordinary rounded outlines which characterise chalk districts, point to some grinding action in their production, and such as might have arisen from masses of ice formed at the bottom of the streams, which rising to the surface laden with stones and gravel, were swept onwards with immense force by the flood-waters, scarping the valley projections in their progress. Ground-ice has been found to be a great cause of floods in the upper sources of the Rhine and Danube, the ice-drifts forming barriers in the course of the rivers, which give rise to destructive inundations. A paper by Engelhardt, of which a translation appears in the "Smithsonian Report" for 1866, points out the consequences of these ice-drifts in choking the rivers, and during a rapid thaw, flooding the Rhenish and Danubian provinces.

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And it is a fair inference, that during lengthened cold, periodic floods of a similar kind, helped to scoop out the chalk-valleys of the south of England.

This grooving process has left unmistakable evidence of its handiwork in the drift lying along the sides of the Kennet-vale, at a height of, in some places, 60 feet above the present valley level, showing that the stream had once occupied that height. Thus the upper and lower beds are of very different ages. And although, as we have already seen, some of the Sarsens are unworn and untravelled, others show signs of rough usage from swift currents of long duration, as they are found in places, as on Inkpen common, drifted in amongst heterogeneous materials, derived from every formation in the London Basin. At an indefinitely less distant period the present diminished stream commenced flowing through the valley. All these several conditions were not accomplished without much and diversified handling on the part of the many handmaids employed by nature. The land rose slowly or by starts, the terraces, probably, marking the changes of level; and when the more powerful of the denuding agents had ceased their operations, the lower valleys had begun to retain the gravel obtained from the older gravel beds on the higher ground, and of the chalk beneath, and gradually the silt, mud, and lastly the peat, brought the face of the valley to its present quiet contour; and now the contracted river, supplied by a less rainfall, and a diminished valley-slope, flows on without any great periodical change in volume or velocity.

USES.

From the time that the ancient Celtic people pastured their herds upon the Downs to the present hour, the Sarsen stones have been appropriated to various uses. Spread broad-cast over the face of hill and dale, and easily accessible, and other building materials not being immediately at hand, what more natural than that the primitive Briton should have selected those fashioned by nature to suit his purposes, and with them build his temples, cromlechs, and memorial stones? We find therefore that he availed himself of some of the most gigantic specimens for the erection of two out of the four circles of Stonehenge (the other two being granitic), and the whole of Abury, together with its mystic serpentine avenues, which are stated by Stukely to have consisted, inclusive with the circles of the temple, of 600 of these Sarsen masses, their individual weight probably averaging from 60 to 100 tons. Now about a dozen may be seen scattered within the stack-yards and paddocks of the modern Teuton village, built within the original earthworks at the expense of the Celtic circles. These few remaining monoliths look strangely out of place, and form but a sorry memento of the past.

"A grey and grief-worn aspect of old days
'Tis the last remnant of the wreck of years."

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Similar stones, not half a century ago, surrounded many of the Wiltshire barrows; but most of them have been since used up for road repairing, or for building purposes. One almost unique stone structure yet remains bearing the title of the Devil's Den, in Clatford bottom, near Marlborough. It consists of two uprights, supporting a massive roof-slab, and two other side props perhaps originally completed the cell, which, enclosed within an earthmound, once formed the last resting place, probably, of some British chief and his family. Nothing, however, now remains of the interments.

"A little urn, a litte dust inside,
Which once outbalanced the large earth, albeit
To-day a four-years child might carry it!"

At many places in Berkshire these stones are used as seats at cottage and inn-doors, and as horse-blocks in stable-yards; and in some villages, as at Thatcham, they are placed to prevent vehicles from running against banks by the road side, and the corners of houses. Camden states that the Sarsens used in building the old mansion at Ashdown Park were dug out of Alfred's Camp close by. And in this same district the ancient Britons took them to construct the well-known Weyland Smith's cave, a cruciform cromlech of the Celtic period, although stated by Wise as the place where repose the ashes of the Danish Earls killed at the battle of Ashdown. One remarkable relic of ancient times is a holed Sarsen, standing under a tree by the road-side at Kingston Lisle, near the famous Hill of the White Horse. It has long given the name of the "Blowing Stone" to a way-side hostelrie. The stone is prevented from injury by reckless travellers by a case of wood, fastened to secure the blow-holes from molestation. Whether the following account of this relic, as given by Job Cork, a rustic poet of that district, be correct, we cannot vouch—

"The Bleawin stwun in days gone by
Wur King Alferd's bugle-harn,
And the tharnin tree you med plainly see,
As is called King Alferd's tharn."

At all events the noise emitted by blowing into the upper part of the stone is so terrific, that if uttered in the silence of the night it must have effectually awakened the Saxon slumberers in the vale below.

Some of the Romanized Britons used these stones to build, by simple impaction, their villages on the Downs; one of which yet stands near Russley, a lonely spot not far from the old Ridgeway, a British trackway from time immemorial used by the Welsh drovers, with their cattle travelling out of the West of England. And yet again, the materials used by the Roman Britons have been carted away to construct the modern village of Baydon. Walls, barns, piggeries, cottages, mansions, churches, all have received a taste of the Sarsens of the Tertiary Basin. These massive blocks, therefore, consolidated

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in a sea-bed thousands of years before man's advent, and left stranded by the gradual retreat of the waters, all their concomitant sands, clays, and other oceanic sedimentary matters washed away from them, and after subsequent exposure for ages to the rude elements used as building stones in the Pagan temple of the Celt, as well as in constructing the mansion of the modern English noble, their past may fitly furnish a theme for the Geologist, the Poet, or the Antiquary.

J. S.

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TIGER MOTHS.—By E. Meyrick.

Tiger Moths—because the popular mind considers them like tigers. On this point, however, opinions differ; since the naturalist who gave them the generic name of Arctia—looking at the matter from a larval point of view—regarded them as similar to bears; whilst the other, who preferred the title of Chelonia, considered the resemblance to lie rather with the tortoise. On the subject of the larva the popular mind again steps in, and confirms the former theory with the *soubriquet* of Woolly Bear; although the external covering of the animal bears about as much resemblance to wool as it does to rhinoceros hide. But entomological nomenclature is full of such trifling eccentricities.

However, one name is sufficient for practical purposes, and the family is generally known by that of Arctiidæ. It is perhaps the most brightly-colored family of all moths, and most of the species found in England have the further advantage of being very common; indeed, if they were not so common, we might probably bestow more admiration on them than we actually do. Fourteen species only occur in this country, and only about half of them are typical tiger moths, the others running into a less conspicuous colouring of white and black by easy gradations; but it must not be supposed that these few give anything like a general idea of the great extent of the family. The number of European species, as enumerated in Staudinger's catalogue, is about seventy; but the British Museum catalogue, which takes in the whole world, includes quite seventy whole genera, many of which contain a very large number of species; so that the entire total is very considerable. Species of typical tiger moths are found in almost every part of the world; but the majority of exotics, as far as I am acquainted with them, seem to come from North America and India, countries whose entomological fauna is not widely different from our own.

As might be expected in so large and brightly-coloured a family, we find very great diversity of appearance. The typical style of colouring is a dark or red ground with large pale spots on it; but all extreme forms of this occur. Thus in the universally abundant moths known as Ermines, the wings are almost or entirely white, with one or two black dots; whilst the male of *Spilosoma (Diaphora) mendica* is entirely sooty-black. Others are dark green, with crimson blotches and stripes, as *Euchelia*; or buff yellow, as *Euthemonia*; whilst *Deiopeia pulchella*, one of our rarest insects, though unaccountably taken last year with some frequency, (it occurred near Hungerford, amongst other places) is white, beautifully chequered with black and

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crimson. It might seem at first sight unfair thus to draw our typical examples from British species only, but I think it will be found that of all the foreign species nearly every one is easily referable to one or other of these groups, although of course they are all united together by connecting links. Mr. Hulme has selected the typical group, or true "Tiger-moths," for illustration, and the excellent plate, which he has so kindly contributed, represents all the species of that group which occur in Great Britain.

The larvæ of the family are perhaps more familiar to the general public than any others, from their diurnal and nomadic habits. They differ entirely from the perfect insects in preserving a striking family likeness and general uniformity of appearance throughout the group, and also in being the very reverse of beautiful, their hues being of sober brown and grey. A few, (especially *Arctia Caja*) but not all, possess the power of causing a very unpleasant irritation by the contact of their hairs with tender portions of the human skin, as I have personally experienced; yet not by any means in so extreme a degree as some other caterpillars, of the Liparidæ for instance. I believe the cause of this irritation is not definitely ascertained, some maintaining that it is produced by a poisonous secretion; but it is more probable that it is due to mechanical means alone, being the effect of the extremely fine points upon the nerves of the skin. Yet this seems scarcely sufficient to account for the excessive pain, said sometimes even to end in death, produced by the touch of some foreign species. It is by no means impossible, however, that these stories may be at least somewhat exaggerated—it is not at all unusual for savages or other ignorant nations to have exaggerated ideas of the prowess of poisonous insects, such as spiders for example, being not unnaturally afraid to test the truth of their belief by practical experiments—and that the venomous caterpillars of the South American forests may be almost as much a fabulous monster as the great sea-serpent. If it is procurable it is much to be regretted that our esteemed President did not bring back a living specimen from Brazil, in which case no doubt some energetic member would have offered himself to be stung as a martyr to science.

The hairy armour of these larvæ, whether poisonous or not, certainly acts as an important protection to its wearer, since most birds decline to touch hairy larvæ at all, unless much pressed by hunger; although a few kinds, probably possessed of a less delicate palatal covering,—amongst which, I believe, the cuckoo stands pre-eminent—make them their especial prey. This distastefulness to birds is, moreover, in a few instances, extended to the perfect insect, for Mr. Stainton has related that poultry refused invariably to touch dead specimens of the common White Ermine (*Spilosoma menthastri*) when thrown to them, although they readily devoured other species. The fact of this insect being thus protected will account for its excessive abundance.

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The first figure in the plate will probably not be at once familiar to the eyes of any merely British collector. It is that of *Hypercompa* (*Callimorpha*) *Hera*, an insect which is common enough in the Channel Islands, but has only recently been allowed the title of British, in consequence of two or three specimens having occurred on the southern coast. These have no doubt flown over from the opposite shore, and not bred here; but there is no apparent reason why, in the event of a large immigration taking place in some favourable season, it should not become naturalised with us.

The other British species of the same genus, *Hypercompa (Callimorpha) dominula*, is represented by fig. 6. It is perhaps the most beautiful of the family when alive, and, where found at all, usually very abundant. In the last report of the society it was included for the first time as a Marlborough species; but I must confess to having my doubts of its true occurrence, or it would probably have turned up in some numbers, though this might be accounted for by the former absence of entomologists at the season of its flight. The *Cynoglossum*, which is the usual food-plant of the larva, does not grow in the West Woods at the locality cited, but it does in other parts of the district, and the insect may therefore still remain to be discovered in some unexplored corner.

Fig. 5 represents of course a typical specimen, and figs. 3 and 4 varieties of the universally abundant *Arctia Caja*. Fig. 3 is from a specimen bred by Mr. Hulme. It is considered a specimen eminently liable to variation, but I do not think this is really the case, at any rate not in all localities; but it is certain that many species vary much more in some localities than they do in others; this is undoubtedly the case with *Abraxas grossulariata* amongst others. I believe it will be found that nearly all *bred* varieties of this species are due to the effect of the food given, and usually to its being given in insufficient quantities, or allowed to dry up. This is known to be a sufficient cause to produce very remarkable varieties in many insects, and would be an interesting subject for experiment, should any member have time to do it scientifically. Peculiar kinds of food do not usually seem to produce any effect in this way, but the larvæ will eat anything, even one another.

Arctia Villica (fig. 7) is common, not to say abundant, in the larva state, in many localities, but has not yet turned up here. It is a sluggish insect, and rarely found on the wing, but the larva is conspicuous on Chickweed, &c., and at once known from *Caja* by its red head, being otherwise very similar.

Nemeophila Plantaginis, commonly known as the Wood Tiger, (fig. 2) is abundant in various localities round Marlborough, but local; usually on hillsides or in wood clearings. The males fly in the hot sun with much activity, but are easily caught. The figure in the plate is from a female specimen;

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in the male the black basal patch on the hind wings is broken up with orange spots. Apart from this sexual difference, it appears to be very constant in colour.

REFERENCE TO PLATE.

Fig. 1.—Hypercompa Hera (*Striped Tiger*).
„ 2.—Nemeophila Plantaginis (*Wood Tiger*).
„ 3.—Arctia Caja (*Common Tiger*), var.
„ 4.—Ditto „ var.
„ 5.—Ditto „ type.
„ 6.—Hypercompa Dominula (*Scarlet Tiger*).
„ 7.—Arctia Villica (*Cream-spot Tiger*).

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ENTOMOLOGICAL REPORT.

LEPIDOPTERA.

THE last Report carried us up to the 31st of July, and the College did not re-assemble until the middle of September; consequently the material for this time is mainly confined to the notes of my captures in August. However, there are half-a-dozen new species to be added, and two previously doubtful are confirmed; while, on the other hand, one has to be removed, leaving a balance of five. Still, even of these few, the majority are rather the result of research, than of recent capture. The occurrence of *Acontia Luctuosa* in former years has been communicated to me by Mr. H. A. Bull; it seems to have been accidentally over looked at thetime. The locality of Marsden (which is near Woodborough), for *Eupithecia Togata* is given in Stainton's Manual, and remained also unnoticed; it may very probably occur nearer. *Catoptria Fulvana* was not previously indentified. *Paramesia Aspersana* is locally abundant, but has been absurdly mistaken for *Ferrugana*. *Eupœcilia Roseana* is confined to the alder-copse at Bedwyn, which is the only place where teazle is abundant. *Coleophora Caespititiella* was not looked for till this winter, and is not abundant; it is curious how scarce are many of the Coleophoræ known to occur here. *C. Albitarsella*, now confirmed, is apparently very much so, though the food plant is abundant. Mr. Coleman has taken a female of Apatura Iris, in Stype Wood, and it will probably be found common there next year, now that attention is directed to it.

Names of new species are printed in capitals. A dash before a date signifies that the first date of occurrence was given in the last Report; if after the last date, will be given in the next. Localities are given only when not previously recorded.

E. MEYRICK.

RHOPALOCERA.

Pieris Brassicæ		—Aug. 18th
„ Rapæ		—Aug. 25th
„ Napi		—Aug. 11th
Argo Galathea	Stype W. ...	—Aug. 7th
Hipparchia Janira		—Aug. 5th
„ Tithonus		—Aug. 5th

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Hipparchia Hyperanthus		—Aug. 7th
Cœnonympha Pamphilus		—Aug. 14th
Apatura Iris	Stype W.; one female	Aug. 8th, *Mr. Coleman*
Vanessa Io		Aug. 3rd—11th
„ Polychloros		—Aug. 6th
„ Urticæ		—Aug. 21st
Argynnis Paphia		—Aug. 4th
„ Adippe		—Aug. 1st
Thecla W-album		Aug. 11th
„ Betulæ	One female ...	Aug. 28th
„ Quercus		—Aug. 7th
Polyommatus Corydon		—Aug. 3rd
„ Alexis		—Sept. 1st
Pamphila Linea		—Aug. 8th
„ Sylvanus		—Aug. 1st
„ Comma ...	Forest Hill ...	Aug., *N. Manders*

SPHINGINA.

Anthrocera Lonicerse ...	Aldbourne Gorse ...	—Aug. 7th
„ Filipendulæ	... ...	—Aug. 7th
Smerinthus Ocellatus ...	Larvæ half-grown ...	Aug. 11th

BOMBYCINA.

Psilura Monacha ...	Burnt Wood ...	Aug. 3rd—14th
Dasychira Pudibunda ...	Larvæ full-grown ...	Aug. 25th
Orgyia Antiqua		—Sept. 1st
Porthesia Auriflua		—Aug. 5th
Lithosia Griseola ...	Eastridge ...	Aug. 8th—15th
„ Complanula		—Aug. 11th
Arctia Caja		—Aug. 1st
Odonestis Potatoria		—Aug. 1st
Cilix Spinula		—Aug. 15th
Platypteryx Lacertinaria	Common Frith: larva full grown ...	Aug. 7th

NOCTUINA.

Bryophila Perla		—Aug. 5th
Acronycta Tridens ...	Aldbourne ...	larvæ Sept.
Xylophasia Lithoxylea		—Aug. 3rd
„ Polyodon		—Aug. 5th
Apamea Oculea		—Aug. 11th
Caradrina Cubicularis		—Aug. 26th
Triphæna Ianthina		Aug. 16th

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Cosmia Trapezina ... ... Aug. 3rd—27th
Acontia Luctuosa ... Marlboro', railway-bank Aug. 8th, 1870, *H. A. Bull, Esq.*

GEOMETRINA.

Ennomos Angularia ... ... Aug. 11th
Cleora Glabraria ... Cakewood ... Aug. 11th
Boarmia Rhomboidaria... ... ... —Aug. 8th
Pseudoterpna Cytisaria ... ... Aug. 5th
Asthena Candidata ... ... Aug. 3rd—9th
Acidalia Scutulata ... ... —Aug. 7th
„ Bisetata ... ... —Aug. 11th
„ Aversata ... ... —Aug. 5th
Abraxas Grossulariata ... ... —Aug. 8th
Eupithecia Togata ... Marsden (Sttn's Man)
Thera Variata ... ... —Aug. 8th
Ypsipetes Elutata ... ... —Aug. 21st
Melanippe Fluctuata ... ... —Aug. 18th
Coremia Ferrugaria ... ... Aug. 3rd—11th
„ Unidentaria ... ... Aug. 3rd—22nd
Camptogramma Bilineata ... ... —Aug. 15th
Cidaria Miata ... ... Aug. 23rd—
„ Immanata ... ... Aug. 29th—Sept. 3rd
Eubolia Plumbaria ... ... —Aug. 23rd

PYRALIDINA.

Hypena Proboscidalis ... ... —Aug. 8th
Rivula Sericealis ... ... —Aug. 8th
Pyrausta Purpuralis ... Bedwyn, Stype W. —Aug. 24th
Botys Verticalis ... ... —Aug. 14th
Scopula Lutealis ... ... —Sept. 2nd
„ Olivalis ... ... Aug. 6th
„ Prunalis ... ... —Aug. 11th
Simaethis Fabriciana ... ... —Sept. 1st
Eudorea Frequentella ... ... —Aug. 5th
Acrobasis Consociella ... ... Aug. 8th
Nephopteryx Robórella... ... ... Aug. 11th
Crambus Pratellus ... ... Aug. 5th
„ Pascuellus ... ... Aug. 9th
„ Culmellus ... ... —Aug. 16th
„ Inquinatellus ... ... —Aug. 28th
„ Geniculeus ... ... —Aug. 22nd
„ Tristellus ... ... —Aug. 28th
„ Pinetellus ... ... Aug. 14th

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TORTRICINA.

Hypermecia Augustana ...	... ...	—Aug. 14th
Antithesia Betulætana ...	Loves W. ...	Aug. 13th—Sept. 3rd
„ Ochroleucana	... .	—Aug. 6th
„ Marginana ...	... ...	—Aug. 13th
„ Gentianana ...	Bedwyn	larvæ, December
Tortrix Viridana ...	... ...	—Aug. 7th
„ Heparana ...	... ...	—Aug. 16th
„ Ribeana ...	... ...	—Aug. 7th
„ Corylana ...	... ...	Aug. 11th
Lozotaenia Unifasciana	... ...	—Aug. 8th
„ Xylosteana ...	... ...	—Aug. 16th
„ Rosana ...	... ...	—Aug. 21st
Spilonota Roborana ...	... ...	—Aug. 13th
Lithographia Nisella ...	... ...	Aug. 14th—Sept. 1st
„ Penkleriana	... ...	—Sept. 2nd
Pœdisca Solandriana ...	... ...	—Aug. 21st
CATOPTRIA FULVANA ...	near Ramsbury, common	July, 1872
Halonota Bimaculana ...	Manton Copse, Henswood	Aug. 30th—Sept. 3rd
Halonota Tetragonana ...	Puthall W., Thrup W.	—Aug. 22nd
Dicrorampha Petiverella	.. ..	—Aug. 22nd
„ Politana ...	Bedwyn	—Aug. 17th
Hedya Ocellana	... ...	—Aug. 14th
„ Dealbana ...	... ...	—Aug. 14th
„ Trimaculana ...	... ...	—Aug. 11th
Steganoptycha Naevana	... ...	—Aug. 21st
Anchylopera Lundana ...	... ...	—Aug. 23rd
Dictyopteryx Contaminana	... ...	Aug. 28th—Sept. 2nd
Crœsia Forskaleana ...	... ...	—Aug. 18th
„ Holmiana ...	... ...	—Aug. 12th
Peronea Schalleriana ...	... ...	—Aug. 14th
„ Comparana ...	... ...	—Aug. 27th
„ Tristana ...	... ...	larvæ, Sept. 2nd
„ Variegana ...	... ...	—Sept. 3rd
PARAMESIA ASPERSANA ...	Bedwyn, Stype W.	Aug. 7th—25th
Teras Caudana	... ...	Aug. 7th—14th
Poecilochroma Corticana	... ...	—Aug. 19th
Semasia Janthinana ...	... ...	Aug. 4th—9th
„ Rufillana ...	... ...	—Aug. 7th
Stigmonota Compositella	... ...	Aug. 5th—19th
Retinia Buoliana ...	... ...	Aug. 8th—10th

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Carpocapsa Funebrana...	...	larvæ, Aug.
Grapholita Hypericana...	...	—Aug. 14th
Cnephasia Subjectana ...	...	—Aug. 1st
,, Virgaureana...	...	—Aug. 11th
Ablabia Pratana ...	...	Aug. 5th
Sericoris Lacunana ...	...	—Aug. 14th
Eupoecilia Angustana ...	...	—Aug. 8th
EUPOECILIA ROSEANA ...	Bedwyn ...	larvæ, December
Xanthosetia Hamana ...	...	—Aug. 16th
Lozopera Dilucidana ...	...	Aug. 7th

TINEINA.

Tinea Arcella	...	—Aug. 17th
Swammerdamia Cesiella ...	...	—Aug. 12th
Hyponomeuta Plumbellus ...	...	—Aug. 21st
,, Padellus...	...	July 31st—Aug. 15th
,, Evonymellus ...	...	—Aug. 15th
Anesychia Decemguttella	Cakewood ...	—Aug. 11th
Cerostoma Sequella ...	...	—Aug. 6th
,, Vittella ...	...	—Sept. 1st
,, Radiatella ...	...	Aug. 1st—Sept. 2nd
,, Costella ...	...	Aug. 2nd—28th
,, Alpella ...	Thrup W. ...	Aug. 19th
,, Xylostella ...	...	—Aug. 18th
Phibalocera Quercana ...	...	—Aug. 5th
Gelechia Rufescens ...	...	—Aug. 6th
,, Populella ...	...	—Aug. 19th
,, Terrella ...	...	—Aug. 21st
,, Maculea ...	...	Aug. 6th—15th
,, Dodecella ...	...	Aug 8th
,, Atrella ...	...	—Aug. 14th
,, Gemmella ...	Loves W....	Aug. 14th—29th
Chelaria Hubnerella ...	...	Aug. 6th—28th
Œcophora Fuscescens ...	...	Aug. 8th
Tinagma Resplendellum ...	...	larvæ, August
Argyresthia Nitidella ...	...	—Aug. 21st
,, Spiniella ...	Stype W....	—Aug. 29th
,, Albistria ...	...	—Aug. 21st
,, Semifusca...	...	—Aug. 17th
,, Brockeella ...	...	—Aug. 6th
,, Goedartella	...	—Aug. 21st
Cedestis Farinatella ...	...	—Aug. 8th

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Oenerostoma Piniariella	... ...	Aug. 8th
Gracilaria Syringella ...	... ...	Aug. 5th—17th
„ Auroguttella	... ...	Aug. 14th—17th
Ornix Betulae	♀type W.	larvæ, Aug.
Coleophora Fuscedinella	... ...	—Aug. 6th
„ Albitarsella	confirmed : — Ramsbury, Mildenhall..	cases, December
„ Alcyonipennella	... ...	Aug. 14th
COLEOPHORA CÆSPITITIELLA	not very common ...	cases, December
Tischeria Marginea ...	Membury ...	larvæ, December
Lithocolletis Cramerella	... ...	Aug. 5th—16th
„ Alnifoliella	... ...	bred, Aug. 21st
„ Salicicolella	... ...	bred, Aug. 15th
„ Quercifoliella	... ...	Aug. 3rd—28th
Cemiostoma Laburnella...	... ...	—Aug. 8th
Phyllocnistis Suffusella...	... ...	Aug. 28th—December
„ Saligna ...	... ...	Aug. 28th—December
Nepticula Floslactella ...	... ...	Aug. 12th
„ Salicis ...	... ...	larvæ, Aug. 3rd

PTEROPHORINA.

Pterophorus Phaeodactylus	Loves W. ...	—Aug. 14th
„ Fuscus ...	... ...	—Aug. 20th
„ Pentadactylus	... ...	—Aug. 8th

CORRIGENDUM.

In the list published in the Midsummer Report, *dele* Paramesia Ferrugana, inserted by mistake for P. Aspersana.

COLEOPTERA.

HEREWITH is published for the first time, a list of the Coleoptera of Marlborough, comprising some 540 species. Of course this is nothing like the actual number that no doubt occur, but it is a beginning, and better than nothing. By far the largest number of these are due to Mr. Janson, who spent a week down here collecting in June, and kindly consented to make up a list of all the species he came across, for our benefit. He could not, of course, preserve the localities also, but nearly all his captures, were taken in either the Forest, the water-meadows, or at Savernake (where several usually littoral species, as of *Bledius*, for instance, occurred on the sand). Mr. Janson expressed it as his opinion, that he had never seen fewer

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Coleoptera in any district than in ours, and he was especially disappointed in the Longicorns, for which he considered the Forest eminently suited, yet very few occurred. I am of opinion myself, however, that he was misled by appearances, as was natural in so short a visit, and that it will really prove a very good one, at any rate for some orders. The fact is that such a thing as an abundant species is almost unknown here, and this is owing, I believe, to the struggle for existence, consequent on the large number of species decreasing the number of specimens; but it is calculated to produce a false impression on the mind of one not acquainted with the district. Mr. R. Hislop published about twenty species occurring in the neighbourhood, in the Entomologist's Monthly Magazine, some years ago, which I have taken the liberty of inserting. Mr. Sidebotham has also communicated a few to the same periodical. Mr. E. C. Rye kindly offered to name any species that we might send him, and has named various ones for me accordingly, besides sending me type-specimens of divers others likely to occur.

I have thought it advisable to add after each name the authority for its occurrence, in the shape of the first letter of his name; the naming of Coleoptera not being particularly easy or free from confusion.

E. MEYRICK.

GEODEPHAGA.

Cicindela campestris, M. Sav. For.
Demetrias atricapillus, M., J. ... ... abundant.
Dromius agilis, M., J. ... common.
4-maculatus, M., J. do.
4-notatus, M., J. ... do.
melanocephalus, J...
Clivina fossor, M., J. ... Poulton.
collaris, M. ... ... Poulton.
Dyschirius globosus, M. Poulton.
Notiophilus palustris, M. Poulton.
biguttatus, M. ... common.
Elaphrus cupreus, M. ... Mildenhall.
Leistus ferrugineus, J.
Carabus monilis, J. ...
granulatus, M., J. ... common.
violaceus, M., J. ... common.
Loricera pilicornis, M. ... Marlboro.
Badister bipustulatus, M. Clench.
Chlænius nigricornis, J.
Anchomenus prasinus, M., J. ... ... common.
albipes, M., J. ... common.
marginatus, J.
fuliginosus, M. ... Ramsbury
Olisthopus rotundatus, J.
Pterostichus cupreus, M. common.
striola, J.
oblongopunctatus, Stype W., H., M. ... ... &c.
madidus, M. J. ... common.
nigrita, M. ... ... do.
vernalis, M. ... ... Marlboro.
diligens, M. ... ... Marlboro.
Amara trivialis, M. ... Overton.
familiaris, M., J. ... common.
lucida, J.
plebeia, M. ... ... Ramsbury
Harpalus ruficornis, J.
æneus, J.
Bradycellus distinctus, J.

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Trechus secalis, J.
Bembidium obtusum, M,J common.
biguttatum, M. ... Marlboro.
guttula, M. ... ... Ramsbury
littorale, M. ... ... common.
nitidulum, M. ... Ramsbury
flammulatum, M. ... Ramsbury
lampros, M., J. ... abundant.
punctulatum, J.
Tachypus flavipes, J.

HYDRADEPHAGA.

Hydroporus nigrita, M. Sav. For. &c.
palustris, M. .. ... Sav. For. &c.
Acilius sulcatus, M. ... common.
Dytiscus marginalis, M. Ramsbury
Colymbetes fuscus, M. ... Sav. For.
Agabus bipustulatus, M,J common.
Laccophilus minutus, M. Sav. For.
Gyrinus natator, M. ... common.

BRACHELYTRA.

Bolitochara bella, J.
Aleochara fuscipes, J.
Tachyusa flavitarsis, J.
Homalota graminicola, M., J. ... ... common.
analis, J.
flavipes, J.
depressa, J.
cinnamomea, J.
Oligota pusillima, J.
atomaria, J.
Encephalus complicans, J.
Tachinus humeralis, J.
rufipes, M. ... ... common.
subterraneus, M., J. common.
Tachyporus obtusus, J.
chrysomelinus, M , J. abundant.
hypnorum, M., J. ... do.
brunneus, J.
Mycetoporus punctus, J.
longulus, J.
Quedius impressus, J.
fuliginosus, J.
picipes, J.
peltatus, J.
maurorufus, J.
attenuatus, M., (R). Poulton.
Leistotrophus nebulosus, M. ... ... Blakes, W.
murinus, J.
Ocypus olens, J.
fuscatus, M., (R). ... Poulton.
cupreus, J.
Philonthus succicola, M. Poulton.
aeneus, M., J. ... Poulton.
politus, M., (R). ... Overton.
umbratilis, M., (R).
varius, J.
sordidus, M., (R). ... Poulton.
ebeninus, J.
fumigatus, J.
longicornis, J.
varians, J.
micans, M., (R). ... Overton.
nigritulus, M., (R).
Xantholinus punctulatus. J.
linearis, M. ... ... Sav. For. &c.
Othius laeviusculus, J.
Baptolinus alternans, J.
Stilicus fragilis M., (J). Ramsbury Plantation
rufipes, J.
affinis, J.
orbiculatus, M. ... Ramsbury
Lithocharis brunnea, J.
Sunius angustatus, M , (R). ... ... Sav. For.
Paederus littoralis, J.

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riparius, M. ... ... abundant.
Lathrobium bunnipes, M. ... ... Mildenhall
elongatum, M. ... Mildenhall
quadratum, M. ... Mildenhall
Stenus guttula, J.
bimaculatus, M. ... Mildenhall
Juno, M. ... ... common.
pusillus, M., J. ... Marlboro.
speculator, M. ... abundant.
circularis, M. ... ... Ramsbury
declaratus, M. ... Ramsbury
brunnipes, M. ... ... abundant.
binotatus, M. ... ... common.
pubescens, J.
gonymelas, J.
ossium, M. ... ... Preshute.
impressus, M. ... Ramsbury
tarsalis, M. ... ... common.
oculatus, M. ... ... Marlboro.
cicindeloides, M. ... Marlboro.
latifrons, M. ... ... common.
Bledius longulus, J. ... Savernake
Platystethus cornutus, J. ... ... Savernake?
Oxytelus rugosus, M. R. common.
sculpturatus, J.
depressus, J.
Trogophloeus riparius, J.
Acidota cruentata, M., R. Ramsbury Plantation
Lathrimæum atrocephalum, M., (R).
Homalium rivulare, M., J. Sav. For. &c.
pusillum, J.
concinnum, J.
vile, J.
salicis, J.
florale, J.
iopterum, J.
Anthobium torquatum, J.
Proteinus ovalis, J.
atomarius, J.
Megarthrus depressus, M., J. ... ... common.
Prognatha quadricornis, J.
Micropeplus porcatus, J. Savernake

NECROPHAGA.

Necrophorus mortuorum, M. ... ... Marlboro.
Silpha rugosa, M. ... ... Ramsbury
4-punctata, J.
laevigata, M. ... . Ramsbury
atrata, M., J. ... ... Sav. For. &c.
Choleva nigricans, J.
morio, J.
nigrita, J.
chrysomeloides, M.... Sav. For.
Watsoni, J.
sericea, J.
Colon brunneum, J.
Scydmaenus scutellaris, J.
collaris, J.
elongatulus, J.
hirticollis, M. ... ... Axford.
Pselaphus dresdensis, H. Froxfield.
Bryaxis fossulata, J.
impressa, J.
Euplectus Karsteni, J.
Anisotoma calcarata, J.
badia, J.
ornata, J.
Colenis dentipes, J.
Liodes orbicularis, J.
Amphicyllis globus, J.
Agathidium atrum, J.
varians, J.
nigrinum, J.
Clambus armadillo, J.

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Calyptomerus dubius, J.
Ptinella denticollis, J.
Trichopteryx atomaria, J.
Ptenidium apicale, J.
Scaphisoma agaricina, J.
Phalacrus coruscus, J.
Olibrus æneus, J.
liquidus, J.
Brachypterus pubescens, J.
urticae, J.
Epurdea æstiva, J.
Nitidula bipustulata, J.
Soronia grisea, J.
Omosita discoidea, M., J. Marlboro.
Meligethes rufipes, J.
æneus, J.
pedicularis, J.
flavipes, J.
picipes, J.
brunneicornis, J.
Cychramus luteus, J.
Cryptarcha strigata, J.
Rhizophagus perforatus, J.
bipustulatus, M., J. Martinsell &c.
Ditoma crenata, J.
Cerylon histeroides, J.
Monotoma picipes, M., J. Froxfield &c.
Læmophlœus ferrugineus, J.
Silvanus unidentatus, J., H. ... ... Sav. For.
Telmatophilus caricis, J.
Byturus tomentosus, J.
Cryptophagus setulosus, J.
scanicus, J.
affinis, J.
vini, M., J. ... ... Ramsbury
Atomaria ferruginea, J.
elongatula, J.
linearis, J.
pusilla, J.
atricapilla, J.
basalis, J.
Lathridius angulatus, J.
ruficollis, J.
Corticaria crenulata, J.
Mycetophagus 4-pustulatus J.
atomarius, J.
Litargus bifasciatus, J.
Mycetæa hirta, J.
Dermestes murinus J.
lardarius, M. ... ... Ramsbury
Attagenus pellio, M., J. ... Marlboro, &c.
Anthrenus varius, H. ... Sav. For.
claviger, J.
Byrrhus pilula, M., J, ... Savernake
fasciata, J. ... ... Savernake
Cytilus sericeus, J.
Saprinus nitidulus, J.
Hister neglectus, M., ... Marlboro,
cadaverinus, J.
succicola, J.
Helophorus rugosus, J.
aquaticus, J.
granularis, M. ... Sav. For.
griseus, M. ... ... Sav. For.
Hydræna riparia, M. ... Poulton.
Laccobius minutus, M. J. common.
Hydrobius fuscipes, M. ... Poulton.
globulus, M., J. ... Poulton. &c.
Sphæridium scarabæoides, J.
Cercyon hæmorrhoum, M. Marlboro.
unipunctatum, J.
quisquilium, M. ... Marlboro.

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melanocephalum, J.
pygmæum, J.
atomarium, J.

LAMELLICORNES.

Melolontha vulgaris, M. ... abundant.
solstitialis, M ... ... do.
Serica brunnea, J.
Hoplia philanthus, J.
Geotrupes stercorarius, M., J. ... ... common.
Onthophagus nuchicornis, J.
ovatus, J.
Aphodius subterraneus, J.
hæmorrhoidalis, J.
fimetarius, M. ... common.
sordidus, M. ... ... do.
rufescens, M. ... ... abundant.
sticticus, J.
tristis, J.
contaminatus, J.
luridus, J.
depressus, J.
arenarius, H. ... ... Figheldean.
Trox scaber, J.
Lucanus cervus, M. ... Ramsbury.

STERNOXI.

Throscus dermestoides, J.
Lacon murinus, M., J. ... common.
Athous haemorrhoidalis M., J. ... ... abundant.
vittatus, J.
longicollis, J.
Limonius minutus, J.
Melanotus fulvipes, M.,J. Ramsbury, &c.
Elater balteatus, J.
Cryptohypnus riparius, M. Marlboro.
Agriotes lineatus, M. J.... common
obscurus, M. J. ... do.
sputator, M. ... ... Clench.
sobrinus, J.
pallidulus, J.
Campylus linearis, J.

MALACODERMI.

Cyphon nitidulus, J.
variabilis, J.
Lampyris noctiluca, M. common.
Telephorus rusticus, M.,J. Axford.
lividus, J.
bicolor, J.
nigricans, J.
limbatus, J.
pallidus, M. ... ... Sav. For.
Malthodes biguttatus, J.
atomus, J.
fibulatus, J.
Malachius bipustulatus, J.
viridis, J.
Dasytes subæneus, J.
niger, J.
Ptinus crenatus, M. ... Marlboro.
fur, M. ... ... common.
Dryophilus pusillus, J.
Priobium castaneum, J.
Anobium domesticum, J.
Ochina ptinoides, J.
Lyctus canaliculatus, J.
Cis boleti, M., J. ... ... Rabley W.
micans, J.
Octotemnus glabriculus, J.

HETEROMERA.

Blaps mucronata, J.
Helops striata, J.
Gonodera luperus, J.
Lagria hirta, M., J. ... common.
Orchesia minor, J.
Abdera bifasciata, H. ... Froxfield.
Melandrya caraboides, M.
Pyrochroa rubens, M., J. Axford, Sav., &c.
Anthicus floralis, J.

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instabilis, J.
Mordellistena brevicauda, J.
parvula, H. ... ... Froxfield.
Anaspis frontalis, J.
fasciata, J.
melanopa, J.
Meloe violacea, M. ... ... Marlboro., &c.
Ischnomera melanura, J.
Œdemera lurida, J.
Rhinosimus ruficollis, J.
planirostris, J.
Lissodema 4-pustulata, J.

RHYNCHOPHORA.

Bruchus rufimanus, J.
seminarius, J.
luteicornis, J.
Rhynchites aequatus, J.
germanicus, J.
pubescens, J.
betulae, J.
Apion pomonae, M., J. ... Sav. For., &c.
craccae, J.
subulatum J.
cervi, J.
aethiops, J.
punctigerum, M. ... Loves W.
loti, J.
aeneum, J.
onopordi, M. ... ... Marlboro.
ebeninum, J.
violaceum, M., J. ... Marlboro.
frumentarium, M. ... West W.
humile, J.
Hookeri, J.
vernale, J.
rufirostre, J.
nigritarse, J.
assimile, M. ... ... abundant.
fagi, M., J. ... ... Marlboro.
Cneorhinus exaratus, J.
Sciaphilus muricatus, J.
Tanymecus palliatus, J.
Sitones tibialis, J.
crinitus, M., J. ... Marlboro.
cambricus, J.
lineatus, M., J. ... abundant.
hispidulus, M. ... Poulton.
Polydrosus undatus, J.
pterygomalis, J.
Barynotus Schonherri, J.
obscurus, M. ... ... West W.
moerens, M. ... ... Loves W.
Tropiphorus mercurialis, J.
carinatus, M. ... ... West W.
Hylobius abietis, J.
Liosomus ovatulus, M., J. Axford, &c.
Phytonomus punctatus, J.
Julini, J.
polygoni, M. ... ... Marlboro.
nigrirostris, M. J. ... Marlboro.
variabilis, M., J. ... Marlboro.
Limobius dissimilis, J.
Phyllobius alneti, J.
pyri, J.
maculicornis, J.
oblongus, J.
uniformis, J.
Omias brunnipes, M., J. Rabley W.
Otiorhynchus tenebricosus, M., J. ... ... common.
picipes, M., J. ... do.
Larinus ebeneus, H. ... Froxfield.
Magdalinus pruni, J.
Erirhinus acridulus, M., J. common.
schirrosus, H. ... Stype W.
costirostris, H. ... Stype W.
maculatus, J.
salicinus, J.
Anthonomus pedicularis, J.

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rubi, J.
Balaninus venosus, J.
nucum, M., J. ... common
villosus, J.
brassicae, J.
pyrrhoceras, J.
Amalus scortillum, J.
Tychius Schneideri, J.
hæmatocephalus, ... Sav. For. (once).
Miccotrogus picirostris, J.
Orchestes alni, M. ... Boltsridge W.
ilicis, J.
fagi, J.
Tachyerges salicis, J.
stigma, J.
Rhamphus flavicornis, J.
Baris abrotani, J.
Cœliodes quercus, J.
geranii, J.
4-maculatus, J.
Orobitis cyaneus, J.
Pachyrhinus Waltoni, J.
4-nodosus, H. ... Froxfield.
Rhinoncus pericarpius, J.
subfasciatus, J.
inconspectus, H. ... Figheldean
Ceuthorhynchus assimilis, J.
sulcicollis, M., J. ... Marlboro.
quadridens, J.
Ceuthorhynchideus troglodytes, J.
floralis, J.
Cionus scrophulariæ, M., J. ... ... Marlboro.
verbasci, H., J.
hortulanus, J.
pulchellus, J.
Gymnetron villosulum, H. Froxfield.
beccabungæ, J.
melanarium, J.
Miarus plantarum, J.
Mecinus pyraster, J.
Mesites Tardii, S. ... ... Roundway Down.
Hylastes rufus, J.
Hylurgus piniperda, J.
Hylesinus crenatus, J.
fraxini, J.
Scolytus destructor, M., J. Abundant.
intricatus, J.
Dryocœtes villosus, J.
Tomicus laricis, J.

LONGICORNES.

Aromia moschata, M. ... Ramsbury, &c.
Callidium violaceum, J.
alni, J.
Clytus arietis, M., J. ... Marlboro.
Liopus nebulosus, J.
Pogonocherus dentatus, J.
Rhagium inquisitor, J.
bifasciatum, J.
Toxotus meridianus, M., J. West W., &c.
Strangalia maculata, J.
melanura, J.
Grammoptera ruficornis, J.

PHYTOPHAGA.

Donacia sagittariæ, J.
thalassina, J.
linearis, J.
affinis, H. ... ... Froxfield.
Lema puncticollis, J.
cyanella, M., J. ... common.
melanopa, M., J. ... Marlboro.
Clythra 4-punctata, J.
Cryptocephalus punctiger, J.

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fulcratus, J.
labiatus, J.
Timarcha laevigata, M.,J. Abundant.
coriaria, M., J. ... do.
Chrysomela Banksii, J.
staphylæa, M., J. ... common.
polita, M., J. ... do.
Lina populi, J.
Gastrophysa polygoni, J.
Phædon tumidulum, M.,J. Marlboro. &c.
cochleariæ, J.
Prasocuris marginella, M., J. ... ... Poulton.
phellandrii, M., J. ... common.
beccabungae, M. ... Poulton, &c.
Ademonia cratægi, H., J. Froxfield, &c.
Agelastica halensis, M.,J. Marlboro.
Galleruca lineola, M. ... do.
Lyperus betulinus,.J.
flavipes, J.
Graptodera lythri, H. ... Froxfield.
oleracea, M., J. ... common.
Hermæophaga mercurialis, J.
Crepidodera rufipes, J.
nitidula, H., J. ... Stype W., &c.
helxines, H. ... ... Stype W.
aurata, H. ... ... Stype W.
chloris, H. ... ... Stype W.
Podagrica rubi, J.
Aphthona atratula, H. ... Froxfield
Phyllotreta lepidii, M. ... Marlboro.
atra, M. ... ... Marlboro.
vittula, M., J. ... common.
undulata, M. ... ... do.
nemorum, M., J. ... do.
ochripes, H. ... ... Figheldean
brassicæ, M., H., J. common.
Plectroscelis concinna, M., J. ... ... Ramsbury.
Thyamis nasturtii, M. ... Marlboro.
fuscicollis, J.
atricilla, J.
Apteropeda graminis, M. Ramsbury.
globosa, J.
Sphæroderma testacea, J.
Cassida viridis, M., J. ... common.
obsoleta, J.
equestris, J.
Coccinella obliterata, M. Ramsbury.
bipunctata, M., J. ... abundant.
7-punctata, M. ... do.
labilis, J.
variabilis, M., J. ... do.
ocellata, J.
16-guttata, M. ... rather common.
14-punctata, J.
22-punctata, M., J. common.
Chilocorus bipustulatus, J.
Lasia globosa, J.
Scymnus capitatus, J.
Rhizobius litura, J.
Coccidula rufa, M., J. ... Ramsbury, &c.

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ORINTHOLOGICAL NOTICES.

Swallow seen Oct. 28th	*G. H. Dawson, Esq.*
Martin seen Oct. 28th	*G. H. Dawson, sq.E.*

DONATIONS TO THE MUSEUM.

Teeth of Elephant and other Fossils	Rev. G. W. Delisle.
Cuinabur from Idria	W. M. H. Milner.
Water Ouzel	G. H. Dawson, Esq.
Fine specimen of Barnacles *(Lepas anatifera)* ...	T. G. Balfour.

ACCOUNTS.

RECEIPTS.	£	s.	d.
Balance from last account	2	15	0
Subscriptions, Hon. Mem.	1	7	6
„ Members ...	2	8	0
Arrears	0	5	0
Donations	10	1	0
Sale of Reports	48	4	0
„ "Antiquities" ...	2	18	0
Deficit	3	18	5
	£71	16	11

EXPENDITURE.	£	s.	d.
Plates for Report	7	10	0
Museum Expenses	11	10	11
Garden „	2	0	0
Expenses for Report ...	7	0	0
Printing Report	41	16	3
Papers and Periodicals ...	1	11	0
Postage, &c.		8	9
	£71	16	11

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After a very careful revision of the Tables published in the last Report, the following errata have been detected :—

Table 16.—Draba verna—Date for 1870 is March 6th, not March 26th.

Table 18.—Viola odorata—In 1873, the first flower was found on March 12th, the second March 18th.

Table 84.—Scrophularia nodosa—Date for 1873 is June 5th not June 8th.

Table 117.—Anthoxanthum odoratum—Date for 1873 is April 20th not April 21st.

In the first alone of these will any material difference occur.
The average date will be March 11th and not March 12th.

T. A. PRESTON.

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JANUARY, 1865.

Days of Month	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade.			Highst insun's rays.	Lowst. on the grass.	Direction of the Wind.		Mean amt. of Cloud (0—10)	Rain.
		Highest.	Lowest.	Mean.			A.M.	P.M.		
	in.	°	°	°	°	°				in.
1	29·476	34·7	28·3	31·6	65·0	20·3	N.E.	N.E.	5·0	
2	·315	35·3	26·5	29·9	36·2	10·4	S.W.	S.W.	10·0	0·16
3	·139	44·5	23·8	32·7	65·0	6·3	S.W.	S.W.	5·5	0·01
4	·447	47·0	25·6	39·7	63·7	17·2	S.W.	W.	5·5	
5	·590	49·3	36·7	42·5	59·9	28·4	S.W.	S.W.	6·0	0·27
6	·594	41·5	36·1	38·6	52·1	30·3	W.	N.W.	2·0	
7	·873	42·2	29·8	36·5	74·7	20·5	N.W.	W.	2·0	
8	·395	48·0	32·5	40·3	53·0	26·7	W.	S.W.	10·0	0·01
9	·355	48·0	36·7	41·5	57·5	30·1	S.W.	W.	5·5	
10	·307	50·1	38·2	45·6	55·0	32·7	S.W.	S.W.	10·0	0·07
11	29·342	45·1	34·4	39·4	63·0	28·7	S.W.	S.W.	9·5	0·18
12	28·644	45·7	35·7	41·4	67·3	29·5	S.	W.	6·5	0·48
13	·686	44·8	30·1	35·5	51·1	25·0	S.W.	S.W.	2·0	0·49
14	·251	43·7	34·7	39·6	66·3	26·0	S.W.	N.W.	8·5	0·13
15	·707	42·4	33·3	37·1	52·1	27·9	N.W.	N.W.	10·0	
16	·555	40·0	32·4	36·2	51·1	23·7	W.	N.W.	5·5	
17	·738	34·8	29·1	31·9	51·5	21·7	N.W.	N.W.	8·5	0·03
18	28·896	37·3	26·7	32·1	55·2	18·1	N.	N.	8·5	0·04
19	29·001	35·0	30·0	32·9	39·1	27·3	N.W.	N.	10·0	
20	·148	36·7	26·6	32·0	67·1	16·5	N.W.	W.	5·5	
21	·178	36·2	17·8	26·6	71·1	9·5	N.W.	N.	0·5	
22	·169	35·0	18·0	27·8	70·2	10·4	N.	N.	5·5	
23	·370	35·5	22·0	28·8	46·2	13·9	N.E.	E.	6·0	0·10
24	·158	33·9	22·8	29·7	45·5	16·0	N.E.	N.E.	9·5	
25	29·234	32·6	25·7	29·8	40·2	18·7	Varble	E.	10·0	0·35
26	28·849	32·3	29·1	31·1	37·7	24·7	E.	E.	10·0	0·67
27	28·739	33·3	30·3	31·3	37·0	28·0	N.E.	N.E.	10·0	0·16
28	29·450	34·5	17·3	26·3	53·5	16·0	N.W.	W.	0·0	
29	29·306	34·8	15·8	22·7	41·3	3·2	W.	S.	9·5	0·21
30	28·777	42·9	20·2	32·9	68·0	18·2	S.E.	S.E.	9·5	0·09
31	28·747	42·3	29·1	35·9	48·5	22·4	S.	S.	10·0	0·35
Means.	29·111	40·0	27·9	34·2	55·0	21·6	...	...	6·8	Sum 3·80

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FEBRUARY, 1865.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	28·448	46·9	30·3	38·6	75·7	28·1	W.	W.	7·0	0·11
2	·654	48·0	35·2	42·5	82·5	28·2	S.W.	S.W.	10·0	0·02
3	28·708	46·5	38·4	39·6	93·2	29·2	S.W.	S.W.	10·0	0·02
4	29·049	39·7	33·4	36·4	41·5	27·9	S.W.	S.W.	9·5	
5	·266	36·6	30·0	33·1	43·7	28·6	E.	S.E.	10·0	0·11
6	·472	45·9	31·1	37·1	52·6	29·2	S.	S.	9·5	0·14
7	·391	49·0	39·6	44·9	58·9	37·9	S.	S.	10·0	0·13
8	·466	38·0	34·7	35·9	54·1	32·7	N.E.	N.E.	10·0	0·01
9	29·773	36·8	27·4	31·7	78·0	17·1	N.E.	N.E.	0.5	
10	30·105	34·8	25·5	30·5	70·0	18·8	N.E.	N.E.	7·5	
11	30·059	29·3	24·3	26·9	49·5	16·8	S.E.	S.E.	10·0	
12	29·831	32·0	17·4	25·6	73·0	9·7	E.S.E.	E.N.E.	9·0	0·01
13	·714	27·6	24·6	26·1	37·2	20·2	E.	E.	10·0	
14	·731	30·5	24·0	27·2	43·2	22·6	E.	E.	10·0	
15	29·489	28·6	22·8	24·8	67·1	18·8	S.E.	S.E.	10·0	
16	28·906	33·4	23·1	28·3	40·6	19·8	S.	S.S.E.	10·0	0·56
17	28·914	37·1	21·7	28·1	80·0	18·9	N.N.E	W.	5·0	0·11
18	29·184	44·8	30·0	37·1	71·8	26·0	W.	W.	4·5	0·15
19	28·825	41·2	32·3	35·7	78·7	28·5	W.S.W	N.W.	7·5	
20	29·702	36·3	27·1	31·8	89·6	21·8	N.	N.	0·3	
21	·875	39·8	23·5	30·7	45·3	13·3	N.	S.W.	10·0	0·08
22	·826	47·7	28·3	37·8	71·1	27·8	W.S.W	W.	9·7	
23	·867	49·8	35·7	43·2	83·0	30·0	W.	W.	10·0	0·25
24	·236	47·1	43·1	44·9	82·7	40·0	S.W.	N.	9·5	0·16
25	·746	48·0	33·2	40·8	100·6	26·3	N.W.	N.	9·2	0·17
26	·413	47·0	30·7	40·1	60·0	20·2	W.S.W	S.W.	10·0	0·18
27	·677	46·9	35·2	40·1	85·2	28·5	N.	S.	9·0	0·03
28	·155	48·1	37·7	43·9	104·9	32·7	N.W.	N.W.	9·0	0·03
Means.	29·410	40·6	30·0	35·1	68·3	25·0	...	...	8·5	Sum 2·27

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MARCH, 1865.

Days of Month	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest	Lowest	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·228	48·8	38·5	43·2	93·8	32·7	N.W.	N.W.	9·0	0·06
2	·333	47·8	39·3	42·9	84·7	32·2	N.W.	N.	9·5	0·03
3	·347	47·2	31·2	37·9	96·3	23·0	N.W.	N.W.	5 5	
4	·633	44·8	28·5	36·8	62·8	18·7	W.	S.W.	10·0	0·47
5	29·118	44·7	31·0	37·6	93·8	23·3	W.	W.	6·0	0·03
6	28·810	42·9	33·3	37·6	73·5	28·5	N.	N.	9·0	
7	29·215	44·6	31·3	37·1	101·1	23·0	N.	N.	2·0	
8	·269	41·8	29·6	34·5	90·9	22·2	N.	N.	8 5	
9	·520	42·0	30·6	35·5	105·7	25·7	N.	N.	...	
10	·310	39·9	25·1	32·0	68·4	16·5	N.W.	W.	9 5	0·02
11	·196	41·3	31·2	36·1	71·6	27·7	N.	N.E.	9·7	0·01
12	·625	40·3	32·0	36·0	88·0	26·5	N.E.	N.E.	8·0	
13	·420	44·0	24·6	33·4	91·4	14·4	N.E.	N.	5·5	0·01
14	·426	39·5	30·2	34·3	71·1	21·5	N.E.	N.E.	10·0	
15	·599	39·5	32·3	35·3	59·1	27·8	N.E.	N.E.	10·0	
16	·556	44·7	30·8	37·1	87·2	26·9	N.E.	S.W.	10·0	
17	·446	43·3	26·6	33·7	78·9	16·6	S.E.	S.E.	8·5	
18	·481	42·9	24·2	32·9	100·2	14·0	S.E.	S.E.	9·0	
19	·278	40·0	30·8	34·3	83·2	27·2	S.E.	E.	10·0	
20	·409	37·7	25·1	30·2	99·4	22·7	E.	E.	4·0	
21	·558	38·5	21·8	29·2	108·1	16·2	E.	N.E.	3·0	
22	·580	42·5	23·6	32·9	94·2	17·1	N.	N.E.	7·0	
23	·414	41·9	27·4	34·3	104·6	18·0	N.	N.	10·0	
24	·385	43·8	25·0	34·0	105·2	14·2	N.	N.	8·5	
25	·271	42·1	23·1	32·0	73·0	11·8	W.	W.	8·5	0·29
26	·049	42·2	32·2	33·5	82·3	26·5	N.	N.	9·8	0·02
27	·610	40·3	24·4	32·2	92·2	17·1	N.	N.	5·0	
28	·578	44·6	26·4	34·4	104·0	15·2	S.W.	S.E.	10 0	0·09
29	·537	38·4	31·6	34·2	49·9	29·1	S.S.E.	S.S.E.	10 0	0·13
30	·797	48·8	31 9	38·9	110·8	30·0	N.W.	N.	9·5	
31	·734	51·7	29·4	39·9	99·9	19·4	N.	N.W.	9·7	
Means.	29·425	43·0	29·1	3·53	87·9	22·1	...	...	8 2	Sum 1·16

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APRIL, 1865.

Days of Month	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·729	53·0	42·0	45·7	116·2	38·6	W.	N.	7·5	
2	·535	54 2	25·3	39·3	117·0	16·0	N.	S.	4·0	
3	·370	56·7	37·3	45 8	104·9	28·7	S.E.	E.	7·5	
4	·743	58·0	29·6	41·0	116·8	25·8	S.	W.	8·0	0.05
5	·809	53·6	45·4	48·2	69·5	39·1	W.	W.	9·5	0·07
6	·820	58·4	47·1	51·4	111·5	43·8	W.	W.	9·0	
7	·736	58·7	47·2	51·7	104·9	42·3	W.	W.	10·0	
8	·640	71·5	40·8	53·8	124·5	33·5	W.	W.	4·0	
9	·758	77·6	35·4	55·3	129·9	26·2	E.	W.	2·5	
10	·815	71·3	38·7	54·1	126·0	26·0	N.W.	S.W.	0·2	
11	·774	71·5	35 9	52·2	122·5	25·2	N.W.	S.W.	2·5	
12	·579	67·8	41·3	53·2	113·1	31·1	N.	S.E.	8·5	0·02
13	·503	60·9	37·8	48·5	119 3	26·7	S.W.	S.W.	4·5	
14	·474	56·8	47·5	50·1	94·9	40·4	S.W.	N.E.	10·0	0·24
15	·699	53·7	41·6	45·7	97·9	40·1	N.E.	N.E.	10·0	
16	·689	68·8	42·5	53·1	119 9	42·3	N.E.	E.	2·5	0·04
17	·469	68·1	48·9	57·6	122·6	38·4	E.	S.	9·0	0·20
18	·449	66·7	52·4	57·0	113·0	44·7	S.W.	S.E.	8·5	0·31
19	·709	52·1	49·6	49·8	63·2	46·8	E.	E.	10·0	0·03
20	·734	61·1	43·6	50·2	107·2	42·0	E.	E.	5·5	
21	·696	67·7	42·5	51·4	107·9	37·2	N.E.	N.E.	5·5	
22	·675	73·8	43·9	56·6	113·7	34·6	N.E.	E.	1 0	
23	·750	71·9	41·7	54·5	113·7	28·2	E.	N.E.	0 0	
24	·793	66·2	38·4	49·1	110·5	27·0	E.	E.	4·7	
25	·739	69·8	34·1	50·2	114·5	24·3	N.	N.	0·0	
26	·698	75·4	35·3	55·0	119·1	26·0	N.	N.	0 5	
27	·691	76·8	39·2	57·6	121·1	29·5	N.E.	N.	0·0	
28	·508	72·1	44·9	57·3	115 0	34·2	N.E.	E.	4·5	
29	·554	55·0	39·8	45·7	101·0	38·1	E.	E.	0·0	
30	·502	59·0	34·2	44·8	110·3	25·0	S.E.	S.E.	0·0	0·01
Means	29·655	64·3	40·8	50·9	110·7	33·4	...	...	5·0	Sum 0·97

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MAY, 1865.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst. insun's rays.	Lowst. on the grass	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·479	60·9	35·3	47·0	108·9	24·4	S.E.	S.	8·0	0·06
2	·487	60·2	44·0	51·4	95·0	39·3	S.	S.W.	9·5	0·01
3	·367	60·9	45·9	53·0	92·0	36·7	S.	S.W.	8·2	0·15
4	·398	59·7	43·9	49·4	83·3	36·8	S.W.	S.W.	9·5	0·22
5	·196	71·8	51·0	58·0	120·3	44·7	S.	S.	9·5	0·15
6	·521	71·8	42·4	53·0	122·3	31·0	S.	S.W.	7·0	
7	·476	56·9	33·2	45·9	68·9	25·1	E.	E.	10·0	0·24
8	·469	64·8	45·9	53·0	126·2	43·8	S.	N.E.	8·5	0·53
9	·175	67·6	47·1	53·7	129·3	43·0	E.	S.	9·0	0·23
10	·074	49·3	46·1	46·2	60·5	36·5	N.E.	N.E.	10·0	0·42
11	·197	47·1	41·9	43·1	73·2	42·0	N.E.	N.E.	10·0	0·08
12	·419	57·0	42·5	46·0	113·7	37·3	S.W.	S.W.	9·5	0·08
13	·535	59·7	36·3	46·6	126·8	27·1	W.	W.	9·0	
14	·435	65·5	43·3	51·8	130·2	33·0	N.	W.	4·0	0·01
15	·182	58·6	43·3	48·2	120·9	34·1	N.W.	W.	10·0	0·05
16	·366	57·6	36·9	47·2	115·7	27·6	S.W.	S.W.	9·5	
17	·414	60·4	45·9	52·6	114·7	39·3	S.W.	S.W.	9·7	0·02
18	·676	64·1	38·0	49·5	123·9	26·4	N.W.	N.	6·0	
19	·892	67·9	35·2	50·3	120·6	25·7	N.W.	W.	2·5	
20	·869	72·8	42·3	56·3	127·7	31·1	S.E.	N.E.	3·5	0·09
21	·561	78·0	51·5	62·0	125·2	40·8	S.E.	S.	1·5	
22	·502	76·6	45·6	59·8	126·2	36·6	S.	S.W.	6·2	
23	·552	71·7	44·9	57·8	122·4	34·7	S.W.	S.W.	5·0	0·05
24	·604	69·8	43·6	54·8	123·1	32·6	S.W.	S.E.	7·5	
25	·664	72·8	36·9	53·9	119·7	27·5	S.W.	S.W.	2·2	
26	·529	75·5	38·2	56·6	122·0	27·2	S.W.	S.	5·5	
27	·433	69·2	47·3	57·3	120·4	34·4	S.	S.W.	5·5	0·15
28	·422	66·0	54·2	58·6	119·9	49·5	S.W.	W.S.W	9·0	
29	·418	72·3	52·4	59·4	123·3	48·4	W.S.W	W.S.W	9·7	0·01
30	·387	62·8	52·3	56·2	119·1	47·2	W.	W.N.W	5·0	
31	·485	68·9	47·4	56·1	135·7	38·2	W.	W.	7·0	
Means	29·458	65·1	43·7	52·7	113·9	35·5	...	...	7·3	Sum 2·55

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JUNE, 1865.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·361	64·4	38·7	54·6	110·2	29·5	E.	E.	8·0	0·61
2	·180	58·1	51·3	52·7	71·9	48·0	S.	S.	10·0	0·16
3	·508	64·7	51·6	56·2	109·4	45·6	W.	W.	9·5	
4	·805	73·8	45·0	56·8	131·8	34·8	W.	W.	6·0	
5	·894	72·8	49·4	57·2	131·8	38·5	N.W.	W.	6·0	
6	29·907	75·5	54 9	61·4	141·2	46·4	W.	N.W.	9·5	
7	30·033	70·9	53·4	60·3	129·0	43·9	N.	E.	7·5	
8	30·028	80·9	42·9	60·1	137·5	34·5	N.E.	S.S.E.	0·0	
9	29·918	82·8	48·3	63·8	139·0	40 0	S.W.	S.	0 5	
10	·729	74·0	50·0	60·8	140·4	41·3	N.E.	N.	3·0	
11	·787	64·5	48·2	54·0	135·7	36·7	N.	N.	8·5	
12	·996	66·8	45·2	54·2	136·8	35·8	N.E.	N.E.	1·1	
13	·980	76·8	40·2	57·2	140·0	32·1	N.E.	N.	0·0	
14	·919	80·7	45·6	61·6	136·0	37·2	N.	N.	0·5	
15	·935	78·4	50·8	61·1	138·2	39·4	Calm.	Calm.	9·0	
16	·963	67·4	53·0	58·7	128·0	42·5	E.	E.	8·5	
17	·925	71·7	50·9	57·9	138·0	42·8	E.	E.	5·5	
18	·834	71·8	42·2	53·7	138·8	32·1	N.E.	E.	5·5	
19	·767	69·6	42 2	52·2	137·0	43·5	N.E.	N.E.	5·0	
20	·891	81 6	37·5	58·1	146 2	29·0	E.	E.	0·0	
21	·876	88 7	38·4	62·6	146·4	29·5	N.E.	S.	0·0	
22	·851	87 8	41·1	64·3	141·1	32·5	S.E.	N.	0·0	
23	·787	82·6	45·1	63·5	148·2	36·3	N.	N.W.	3·0	
24	·738	72·5	55·6	60·5	149·0	45·3	N.	N.	5·5	
25	·675	72·7	45·9	58 2	136·6	37·0	N.	N.W.	7·5	
26	·672	68·4	51·0	58·4	98·0	43·5	N.W.	N.W.	10·0	
27	·735	72·8	54·9	61 8	135·9	46·7	N.W.	W.N.W	9 0	
28	·563	75·8	56·1	63·5	142·9	50·0	W.	S.W.	10·0	0·45
29	29·123	60·0	53·6	55·3	73·6	48·4	S.W.	S.E.	10 0	0·83
30	28·885	59·9	52·5	53·5	107·5	48·1	E.	N.E.	10 0	0·74
Means	29·740	72·9	47·9	58·5	129 9	39·7	...	...	5·5	Sum 2·79

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JULY, 1865.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature.					Direction of the Wind.		Mean amt. of Cloud (0—10)	Rain.
		In the Shade.			Highst insun's rays.	Lowst. on the grass.				
		Highest.	Lowest.	Mean.			A.M.	P.M.		
	in.	°	°	°	°	°				in.
1	29·319	69·7	49·1	57·6	125·5	45.6	N.	N.	5 0	
2	·607	78·4	43·3	59·0	138·6	34·7	N.W.	W.	3·5	
3	·622	80·4	43·2	60·5	140·7	35·7	W.	W.	2·5	
4	·503	75·2	46·2	62·7	139·1	38·1	W.	S.W.	3·0	0·03
5	·600	77·5	58·9	66·0	135·3	52·7	S.W.	W.	6·5	0·44
6	·409	78·3	59·9	65·1	126·6	56·5	S.W.	S.W.	9·0	0·23
7	·286	69·7	57·6	61·7	125·2	52·1	S.W.	S.W.	6·5	0·30
8	·322	70·2	56·7	60·8	119·6	50·9	S.W.	W.	7·0	0·10
9	·470	70·4	54·1	58·8	140·9	47·2	N.W.	W.	9·5	0·03
10	·409	71·9	47·8	57·2	125·7	39·3	N.W.	N.W.	7·0	0·01
11	·280	68·0	51·5	56·9	128·7	45 3	N.W.	N.W.	8·5	
12	·585	66·9	43·9	53·8	116·5	34 5	N.W.	N.W.	8·0	0·27
13	·456	61·4	50·2	54·8	102·5	40·1	S.W.	S.W.	10·0	0·23
14	·436	72·9	53·6	61·3	126·3	47·7	S.W.	S.W.	7·5	
15	·401	76·4	54·1	64·7	123·9	45·5	S.	S.	1·5	0·04
16	·569	76·2	59·9	66·0	121·7	55·8	W.	W.	7·0	
17	·526	71·9	54·7	61·2	132·5	42·2	S.E.	S.E.	9·5	
18	·402	73·9	48·6	57·0	110·5	40·5	S.	S.	9·5	0·24
19	·329	74·1	46·4	58·2	112·1	39·4	S.	S.	8·5	0·01
20	·346	74·3	52·7	62·2	135·2	43·9	S.	S.	8·0	
21	·377	80·3	49·4	62·3	137·4	39·8	N.W.	N.W.	5·0	
22	·283	81·8	50·2	62·2	140·5	42·9	N.W.	N.W.	5·0	0·09
23	·448	73·7	58·2	62·2	113·5	52·3	E.	Calm.	10·0	
24	·709	82·1	54·1	64·0	132·8	49·0	E.	E.	7·0	
25	·796	76·9	56·6	64·4	115·5	51·9	N.E.	N.	7·0	
26	·896	77·3	53·1	63·4	134·8	48·1	N.	N.E.	8·5	
27	·778	76·0	54·7	63·8	141·8	47·5	W.	W.	5·5	
28	·818	71·5	41·4	54·0	138·1	34·2	N.	N.	4·0	
29	·629	71·3	57·6	61·6	133·1	42·2	N.W.	N.W.	5·5	
30	·571	72·0	55·6	61·2	145·1	47·2	W.	N.W.	6·5	
31	·335	68·3	43·0	52·0	86·2	34 2	N.	N.E.	10·0	0·49
Means	29·501	73·8	51·8	60·5	127·3	44 4	...	...	6·8	Sum 2·51

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AUGUST, 1865.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade			Highst insun's rays	Lowst. on the grass.	Direction of the Wind.		Mean amt. of Cloud (0—10)	Rain.
		Highest.	Lowest.	Mean.			A.M.	P.M.		
	in.	°	°	°	°	°				in.
1	29·329	61·1	46·9	51·7	126·5	44·3	N.W.	N.W.	8·5	0·03
2	·212	60·5	45·7	51·4	126 0	37·7	W.	W.	8·0	0·10
3	·305	62·1	41·9	49·8	116·2	36·7	N.W.	N.W.	10·0	0·10
4	·555	66·2	42·7	53·3	129·2	34·7	N.W.	N.W.	2·5	
5	·640	70·3	40 2	54·1	138·2	32·8	N.W.	N.W.	2·0	
6	·548	69·6	52·4	59·3	118·5	44·7	W.	S.W.	10·0	0·32
7	·398	68·1	57·1	60·9	123·5	53·4	S.W.	N.W.	10·0	
8	·549	66·6	47·3	56·7	123·9	38·5	N W.	N.W.	9·0	
9	·444	73·7	42 0	57·5	137·1	36·1	S.	S.	8·0	
10	·313	69·3	47·5	56·0	119·3	40·0	S.	S.	10·0	0·07
11	·069	67·6	55·7	61·1	100 2	50·2	S.	S.	10·0	0·23
12	·254	64·6	55·9	58·9	117·1	44·4	S.	S.	10·0	0·46
13	·307	69·5	53·8	60·0	123·1	44·2	S.W.	S.W.	8·5	0·46
14	·279	68·0	54·2	60·3	124·6	44·1	S.W.	N.W.	6·5	0·52
15	·075	69·3	50·9	59·7	111·4	42·7	S.W.	S.	9·5	0·08
16	·254	68·2	49 3	56·5	120·4	39·9	W.	W.	6·5	0·21
17	·392	68·4	53·3	57·6	125·4	45·2	W.	W.	7·5	0·11
18	·424	65·1	51·6	57·8	120·4	41·7	N.W.	N.W.	5·0	
19	·488	73·4	40·5	56·5	133·5	35·8	N.E.	S.E.	2·0	
20	·337	68 0	50·6	57·7	109·9	35·7	S.	S.W.	7·0	0·25
21	·307	70·1	52·3	59·8	131·9	43·1	W.	N.W.	8·0	
22	·255	74·9	48·2	59·4	140·7	42·6	N.W.	S.	4·5	0·07
23	·033	60·5	49·8	54·4	93·2	43·9	S.E.	S.	10·0	0·87
24	·348	70·6	52·6	60·5	126·0	46·3	S.	S.E.	1·5	0·01
25	·626	69 3	48·3	58·0	122·9	41·1	E.	N.E.	6·5	
26	·817	75·7	50 7	60·7	129·0	42·4	E.	W.	5·5	
27	·706	76·5	42·2	59·5	124·9	34·7	Calm.	S.	3·5	0·01
28	·378	76·4	52·8	62·0	91·1	46·2	S.	S.W.	9·5	
29	·601	64·4	48·1	55·1	108·0	40·4	N.W.	N.	7·5	
30	·854	69·1	43·3	55·4	120·2	34·0	N.	N.	1·0	
31	·781	64·8	50·5	57·3	119·0	43·0	N.	W.N W	9·5	
Means	29·415	68·4	49·0	57·4	121·0	41·3	...	...	7·0	Sum 3·90

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SEPTEMBER, 1865.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·693	68·5	54·0	59·3	119·1	46·8	N.W.	N.W.	8·0	
2	·735	74·9	55·4	66·0	130·2	48·1	N.W.	N.W.	4·5	
3	·753	74·0	57·0	63·9	140·4	48·7	N.W.	N.W.	9·5	
4	·679	77·4	49·9	62·7	121·1	42·7	N.N.W	W S W	9·0	
5	·718	71·2	51·0	60·7	130·4	41·6	W.	W.	7·0	
6	·700	77·1	50·0	61·5	131·3	40·9	W.	W.	7·5	
7	·602	77·6	52·8	63·9	139·5	44·1	W.	W.	9·0	
8	·469	79·8	53·4	66·0	124·0	46·0	W.	S.S.W.	2·5	
9	·619	70·8	52·1	60·8	122·9	43 0	S.W.	S.W.	2·0	
10	·682	72·2	58·6	64·4	115·8	54·0	S.W.	W.	9·7	
11	·881	71·8	60·1	64·4	115·8	57·8	W.	W N W	10·0	0·01
12	·965	76·6	58·0	65·8	141·0	53·3	W N W	W N W	6·0	
13	·871	78·8	52·8	65·5	127·9	45·5	W.	W.	0·0	
14	·796	79·6	47·1	63·0	125·2	39·4	W.	S.S.E.	0·0	
15	·714	82·5	47·8	64·3	130·2	37·7	E.	S.	0·0	
16	·718	76·1	50·7	61·9	123·8	43·5	N.E.	N.	8·0	
17	·843	74·8	49·0	60·7	125·9	40·1	N.E.	N.E.	2·0	
18	·971	75·0	47·8	61·1	138·3	39·2	N.E.	N.	9·0	
19	·930	74·0	43·7	57·3	124·9	35·2	E.	S.E.	6·0	
20	·663	78·4	48·1	61·9	124·6	39·1	S.E.	S.	1·0	0·17
21	·775	62·8	50·7	55·8	102·7	44·0	N.	N.E.	9·5	
22	29·914	65·0	44·2	53·8	113·1	34·7	N.E.	N.	5·5	
23	30·011	65·0	35·2	50·7	108·9	29·5	E.	N.E.	1·5	
24	29·974	69·9	47·6	58·1	110·8	38·0	N.E.	E.	5·0	
25	·935	71·6	52·3	60·0	114·2	45·0	E.	E.S.E.	5·0	
26	·778	76·4	50·0	60·5	117·8	41·3	S.E.	S.	3·5	
27	·543	78·3	42·2	59·5	122·0	34·9	E.	E.S.E.	0 0	
28	·742	69·4	36·9	53·4	111·0	30·1	E.N.E.	E.	5·0	
29	·757	66·8	43·6	55·1	111·1	35·0	S.E.	E.	4 0	
30	·648	66·9	38·3	53·0	111·1	31·4	S.S.E.	S.S.E.	3 0	
Means	29·769	73·4	49·3	60·5	122 5	41·7	...	...	5 1	Sum 0·28

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OCTOBER, 1865.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·508	67·7	39·2	54·9	111·2	30·7	S.	E.S.E.	7·5	
2	·477	72·0	45·6	59·0	117·2	35·0	E.	S.E.	4·0	
3	·677	72·6	52·8	61·7	110·1	41·2	E.	S.E.	3·5	
4	·706	68·9	48·5	57·2	112·2	39·3	E.	E.	5·0	
5	·564	68·7	43·3	55·0	111·4	34·7	E.S.E.	S.E.	0·5	
6	·542	65·4	33·9	50·6	107·7	25·9	S.E.	S.E.	0·0	
7	·398	65·2	32·8	49·9	107·2	24·5	E.	E.S.E.	0·5	0·20
8	29·005	66·2	48·6	56·1	105·2	42·0	S.E.	S.	9·5	0·09
9	28·896	66·5	51·6	58·3	86·6	48·1	S.	S.	9 0	0·03
10	·844	65·8	54·0	58·5	108·0	49·0	S.	S.	8.5	0·77
11	28·785	63·2	54·1	56·7	102·7	47·8	S.	W.	9·5	0.01
12	29·074	59·1	49·4	53·4	102·2	43·5	W.	W·	2·2	
13	·214	55·9	31·2	45·4	80·9	25·0	N.W.	N.W.	7·5	
14	·495	56·5	44·1	49·3	61·8	35·7	N.E.	S.	10·0	0·06
15	·497	58·3	44·1	50·5	102·1	38·3	S.	N.	9·0	
16	29·420	55·5	31·9	43·4	78·0	29·1	Calm	S.W.	10·0	1·66
17	28·847	58·0	38·8	49·9	105·0	38·8	S.W.	S.W.	6·5	0·01
18	·628	53·1	40·1	46·2	57·9	34·4	S.E.	S.W.	10·0	0·30
19	28·677	46·7	40·1	42·7	64·2	38·1	N.	N.W.	9·5	0·04
20	29·050	51·6	31·0	41·9	98·5	24·0	N.N.W	N.W.	4·5	0·19
21	29·174	49·0	31·3	40·7	71·8	23·7	N.W.	N.	10·0	0·89
22	28·958	46·8	40·3	42·7	48·0	38·0	E.	E.	10·0	0·47
23	29·204	50·7	41·3	45·2	71·2	38·9	N.E.	N.E.	8·5	0·02
24	·162	57·8	31·8	46·2	98·2	26·0	S.	S.W.	5·2	0·40
25	29·146	54·6	44·9	49·7	89·4	39·0	N.W.	N.W.	8·5	0·35
26	28·939	58·7	36·0	47·8	59·6	27·9	S.	S.W.	10·0	0·50
27	28·558	53·8	44·5	48·2	88·0	38·9	W.	W.	6·5	0·21
28	29·265	46·0	34·2	39·1	86·0	31·3	N.	N.	5·5	0·42
29	28·819	59·8	31·3	45·3	77·0	23·8	S.	W.	8·0	0·04
30	·702	52·8	43·6	47·4	92·0	38·5	W.	W.	8·5	0.55
31	28 961	46·1	40·4	42·2	50·9	35·0	N.E.	N.	10 0	0.04
Means.	29·135	58·5	41·1	49·5	89·1	35·0	...	...	7 0	Sum 7·25

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NOVEMBER, 1865.

Days of Month	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·451	47·9	30·3	40·0	79·1	23·6	N.	N.	5·2	0·04
2	·529	49·7	24·4	36·5	80·0	19·2	N.	W.	9·2	0·23
3	·627	50·6	29·5	39·5	86·6	22·8	W.	N.W.	3·0	
4	·733	50·9	25·4	37·3	89·0	20·1	N.W.	N.	1·5	0·06
5	·766	49·1	28·4	38·5	61·5	25·8	N.	N.	7·5	
6	·770	48·1	28·7	37·1	81·9	21·2	N.E.	N.	10·0	
7	·681	44·1	32·0	37·8	72·9	28·0	N.	N.E.	9·7	0·06
8	·537	52·3	34·6	42·6	73·7	31·7	N.E.	N.E.	9·5	0·01
9	·565	52·4	39·6	44·5	77·5	33·6	N.E.	N.E.	10·0	
10	·818	48·3	31·3	38·6	79·6	25·0	N.E.	N.	1·0	
11	·857	46·0	32·3	40·5	50·1	25·6	N.	N.	10·0	
12	·957	49·9	39·4	44·3	86·6	32·0	N.	N.	4·2	
13	·887	46·0	30·5	38·7	68·4	23·0	E.	E.	5·0	
14	·596	52·0	31·7	40·7	55·0	27·0	E.	S.	10·0	0·28
15	·792	50·5	34·2	43·8	84·3	32·0	W.	N.W.	0·5	
16	·785	54·3	26·8	38·4	65·6	21·5	N.W.	W.	9·5	0·16
17	·282	55·9	40·0	49·5	61·1	38·0	S.W.	W.	9·5	0 34
18	·704	50·0	33·3	41·6	83·5	26·6	W.	W.	5·5	0·04
19	·352	55·2	44·0	50·5	55·2	39·0	S.S.W	S.S.W.	10·0	1.18
20	29·133	52·9	50·2	51·0	87·8	46·7	S.W.	S.W.	9·0	0·14
21	28·821	53·8	46·9	50·0	80·0	41·0	S.W.	S.W.	7·5	0·26
22	28·511	55·5	46·2	50·2	64·3	41·0	S.W.	W.	7·0	0·20
23	29·014	54·3	45·2	48·1	79·7	39·4	S.W.	S.W.	5·5	0·31
24	28·846	57·2	45·6	49·6	65·0	40·1	S.W.	W.	6·0	0.11
25	·703	53·8	43·2	49·0	55·1	38·0	S.	S.	9·7	0·08
26	28·852	47·1	42·7	44·7	74·4	37·9	W.	W.	7·5	
27	29·248	47·5	25·6	36·1	69·1	19·5	S.W.	W.S.W	6·5	0·09
28	28·692	49·0	43·5	46·4	55·3	40·0	S.E.	S.S.E.	9·5	0·08
29	29·126	44·9	43·2	43·8	72·1	37·6	N.W.	N.W.	8·0	0·13
30	·506	47·8	38·1	43·0	59·3	32·5	N.E.	N.W.	5·0	
Means.	29·405	50·6	36·2	43·1	71·8	31·0	...	...	7·1	Sum 3·82

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DECEMBER, 1865.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays	Lowst on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·530	44·7	38·0	41·7	57·9	27·6	N.W.	N.	7·5	
2	·295	43·6	37·4	40·5	47·1	29·9	N.	S.	9·5	0·06
3	29·054	45·9	38·5	42·0	70·3	33·1	S.E.	S.	5·5	0.07
4	28·755	48·1	36·3	43·7	53·9	29·0	S.E.	S.	9·7	0·04
5	29·142	49·8	40·1	44·5	71·8	33·1	S.W.	S.	9 0	0·02
6	·477	52·6	42·1	48·3	56·9	38·0	S.	S.	10·0	0·54
7	29·725	51·7	49·0	50·5	55·2	44·1	S.	S.	10·0	0·07
8	30·078	51·0	40·2	45·5	54·3	36·8	S.	S.	10·0	
9	·040	47·2	40·3	44·5	49·8	35·9	S.	S.	10·0	
10	·124	46·4	39·3	42·8	52·9	33·8	S.	S.	9·5	
11	·219	44·9	40·6	42·9	62·2	37·3	S.	S.	6·0	
12	·169	39·7	25·5	34·2	44·7	19·5	S.W.	S.W.	10·0	
13	·029	43·5	28·3	34·7	43·5	21·0	N.E.	N.E.	5·0	
14	·038	44·8	29·1	38·8	76·1	24·2	N.	N.	4·5	
15	·257	39·7	30·9	35·0	65·0	24·9	N.	N.	3·0	
16	·236	41·7	24·3	34·8	42·3	18·4	Calm.	W.	10·0	
17	·192	43·7	33·9	39·8	47·8	30·0	W.	N.	10·0	
18	30·033	41·0	37·2	39·4	41·2	33·1	N.W.	N.E.	10·0	
19	29·816	46·6	36·6	41·0	49·8	32·0	S.E.	S.E.	10·0	0·03
20	·738	50·9	37·5	45·4	72·9	32·7	S.	S.W.	5·5	0·01
21	·805	50·6	43·6	47·3	64·7	37·5	S.	S.W.	6·5	
22	·848	43·2	38·0	40·6	49·5	35·8	S.	S.	10·0	
23	·917	43·6	36·5	40·5	59·8	32·2	S.	S.	10·0	
24	·942	45·9	34·4	40·0	49·8	30·9	S.	S.	10·0	
25	·926	48·6	37·3	44·4	64·6	35·5	S.W.	S.W.	10·0	
26	·743	49·5	42·0	46·6	53·9	37·3	S.W.	N.W.	10·0	0·03
27	·877	43·0	27·1	34·4	72·1	18·9	W.	W.	1·0	
28	29·425	51·6	35·0	43·6	60·3	32·0	S.W.	S.W.	10·0	0·56
29	28·941	50·7	41·8	45·7	51·8	37·5	S.W.	S.W.	8·5	0·44
30	29·134	45·5	32·3	38·1	69·9	28·2	W.	W.	5·5	0·23
31	·014	56·6	36·3	47·0	58·2	29·1	S.W.	W.	10·0	0·29
Means	29·726	46·6	36·4	41·6	57·1	31·3	...	...	7·9	Sum 2·39

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JANUARY, 1866.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·230	43·7	32·0	38.0	72·0	27·5	W.	W.	4·0	0 02
2	·336	52·5	34·5	42·7	57·5	27·9	S.W.	S.W.	10·0	0·21
3	·487	49·1	37·4	44·9	62·4	29·5	W.	W.	5·0	0·08
4	·271	50·0	38·8	45·6	67·9	30·4	S.	S.W.	7·0	0·13
5	·395	44·7	42·0	43·2	78·1	38·2	N.	N.W.	6·5	
6	·586	45·9	26·8	34·4	74·2	19·4	W.	W.	5·0	0·31
7	29·107	47·0	27·7	39·2	72·1	24·1	W.	N.W.	5·5	0·16
8	28·823	48·8	35·1	41·6	72·1	34·6	N.W.	N.W.	5·0	0·15
9	·627	40·0	31·9	34·8	59·0	26·3	W.	W.	4·5	0·03
10	·764	42·0	31·4	37·8	50·9	26·5	N.W.	N.W.	8·5	0·62
11	28.575	34·0	30·7	32·7	34·1	26·1	N.E.	N.	7·0	0·10
12	29·273	40·3	26·5	32·7	73·8	22·1	N.W.	N.W.	6·5	0·25
13	·095	50·7	16·1	37·0	50·7	13·8	S.W.	N.W.	10·0	0·27
14	·360	51·9	45·0	48·7	54·5	42·0	W.	S.W.	10·0	0·23
15	·521	47·2	41·6	44·3	67·5	33·5	W.	N.W.	6·0	0·25
16	·291	50·2	39·2	45·4	58·1	34·2	S.W.	N.W.	10·0	0·19
17	·687	50·6	36·6	44·7	52·1	28·9	W.	W.	10 0	0·01
18	·595	49·0	40·3	45·5	53·3	37·2	S.W.	S.W.	10·0	0·08
19	·255	48·6	43·3	45·7	78·5	38·1	W.	W.	6·0	0·06
20	·154	48·9	41·5	45·7	76·9	37·2	S.W.	W.	8·0	
21	·305	52·0	36·0	44·3	70·9	28·8	S.W.	S.	10·0	0·19
22	·347	51·4	45·0	47·0	52·9	42·5	W.	N.W.	10 0	0·29
23	29·720	48·7	40·6	44·5	67·9	33·9	N.W.	N.	10·0	
24	30·135	46·6	30·6	38·3	79·3	23·1	N.W.	N.W.	1·5	
25	·142	44·2	29·8	38·5	47·0	23·2	N.W.	N.W.	8·5	
26	30·116	41·0	27·0	34·4	43·2	20 2	W.	W.	10·0	
27	29·876	43·9	29·6	36·7	44·9	28·4	S.W.	S.E.	10·0	
28	·465	48·1	34·7	42·5	71·2	32·4	S.W.	S.W.	10·0	0·39
29	·377	45·1	39·0	41·7	85·1	32·4	W.	N.W.	8·5	
30	·564	47·7	32·8	39·1	50·6	26·2	S.	S. W	10·0	0·06
31	29 061	50·7	42·0	46·8	66·9	40 0	S.	S.W.	9·5	0·24
Means	29·372	46·9	35·0	41·2	62·8	30 0	...	...	7·8	Sum 4·32

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FEBRUARY, 1866.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	28·864	53·7	44·4	48·7	61·5	38·7	S.	S.W.	10·0	0·52
2	29·007	48·9	43·4	45·3	81·5	39 8	N.W.	N.W.	8·5	0·02
3	·222	47·7	36·7	41·9	79·5	30·0	W.	S.W.	6·0	0·19
4	·498	51·7	33·8	42·9	55·5	26·4	S.W.	W.	10·0	0·36
5	·532	53·6	37·1	43·0	85 6	29·3	W.	W.	5·0	0·01
6	·394	58·6	38·5	47 7	71·3	29·5	N.W.	W.	8·5	0·28
7	·161	53 0	37 0	45·3	81·5	33·0	W.	N.W.	8 5	0·14
8	·500	48·4	36·0	40·9	81·2	30·2	W.	N.W.	6·0	0·47
9	·232	51·6	37·3	45·7	58 9	32·8	S.	S.W.	10·0	0·19
10	29·056	49·3	39·3	43·6	86·6	34·3	S.W.	S.W.	4·6	0·23
11	28·313	49·8	38·9	43·8	54·5	33·8	S.	S.	10·0	0·62
12	28·960	43·5	37·0	39·9	88·9	30·8	N.W.	N.W.	8·0	0·01
13	29·263	42·1	29·4	35·0	82·9	22·4	N N W	W.	1·0	
14	·118	41·5	28·2	35·1	52·1	20 0	S.W.	S.W.	10 0	0·31
15	·031	45·0	32·4	38·1	78 9	26·0	N.W.	N.W.	9·5	0·12
16	·039	48·6	37·4	42·6	52·5	33·1	W.	W.	10·0	0·06
17	·437	42·0	35·4	36·8	44·9	31·4	N.	N.W.	10·0	
18	·534	39·0	21·4	30·2	83·5	15·5	Calm	N.E.	0·1	
19	·594	42·0	23·6	32·2	82·0	18 2	N.W.	N.	0·1	
20	·572	40 7	21·7	30·6	85·7	16·5	Calm	N.	5·0	
21	·837	42·7	25·2	33·7	81·2	23·0	N.	N.W.	2·5	
22	·635	49 0	24·1	36·4	51·9	18·1	S.	S.W.	10·0	0·01
23	·329	51·0	32·5	42·6	81·2	24·4	S.W.	W N W	7·0	0·05
24	·528	44·7	30·2	37·0	86·2	23·4	N.W.	W.	2·5	0·06
25	29·010	45·0	34·1	38·3	61·6	28·3	W.	N.W.	10·0	0·02
26	28·873	43·8	27·8	34·8	88·2	21·1	S.W.	S.W.	8·0	0·08
27	·992	37·8	32·1	34·9	43·8	26·1	S.W.	N.E.	10 0	0·01
28	28·839	33·7	21·7	28·3	72·5	20·0	N.E.	N.E.	10·0	0·03
Means.	29·228	46·4	32·7	39·1	72·0	27·0	...	...	7·2	Sum 3·79

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MARCH, 1866.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·038	33·8	15·3	24·5	58·0	12·6	N.E.	E.	9·0	
2	·230	38·8	22·7	30·7	84·6	20·8	E.N.E.	N.E.	0·0	
3	·208	38·9	19·3	28·5	88·0	14·4	N.E.	N.E.	4·0	
4	·249	40·9	24·4	32·8	85·1	23·0	Calm.	N.E.	9·0	
5	29·317	42·0	25·3	32·5	92·0	19·0	N.E,	S.E.	3·2	
6	28·792	40·1	28·4	33·6	72·3	22·4	S.	S.	9·5	0·30
7	28·694	43·5	25·3	33·3	94·6	19·6	S.	S.	6·0	
8	29·082	42·1	27·9	34·3	84·0	26·0	N.E.	N.E.	9·5	0·01
9	·587	44·8	32·0	37·1	88·5	27·1	N.E.	N.E.	9·0	
10	·898	40·8	31·2	35·6	54·0	26·5	N.E.	N.E.	10·0	
11	·869	45·6	33·2	38·8	56·0	29·0	N.E.	N.	10·0	
12	·462	49·1	30·2	39·5	94·8	23·0	W.	W N W	6·5	0·03
13	·164	44·3	32·3	36·5	84·2	27·0	N.	N.	8·5	
14	29·048	42·0	22·7	32·2	94·1	17·0	N.	N.	4·0	
15	28·737	43·8	30·2	35·2	60·9	24·1	S.	S.	10·0	0·17
16	·697	51·7	35·3	42·7	86·9	29·0	S.E.	S.E.	10·0	0·37
17	·644	53·0	39·6	45·7	94·7	33·0	S.	S.	8·0	0·01
18	·817	47·9	35·3	41·2	73·2	28·7	S.E.	S.	9·0	0·01
19	·793	43·8	37·4	39·6	53·0	32·9	E.S.E.	E.S.E.	10·0	
20	28·935	43·0	37·6	39·6	52·0	34·7	E.	E.	10·0	0·16
21	29·119	41·7	31·6	35·0	83·0	28·5	E.	E.	9·5	
22	·362	45·8	29·0	36·1	95·9	23·1	N.	N.	1·5	0·06
23	29·224	51·8	31·4	39·8	81·9	26·0	S.	S.	9·0	0·54
24	28·586	52·0	34·8	42·7	96·8	31·2	S.	W.	7·5	0·07
25	29·400	52·0	40·1	45·4	102·0	34·2	N N W	N N W	7·0	
26	·702	55·1	30·4	42·8	94·1	23·3	S.W.	S.W.	10·0	0·10
27	·645	56·7	44·5	49·5	115·9	40·3	S.W.	N.W.	6·0	
28	·691	53·9	47·1	49 0	90·2	34·7	W.	W.	9·5	0·20
29	·724	56·8	46·5	50·3	96·0	42·9	W.	W.	10·0	
30	·760	58·0	46·4	50·8	103·9	42·8	W.	W N W	9·0	0·09
31	·425	51·6	44·8	45·9	90·8	40·5	W.	N.	10·0	0 14
Means	29·223	46·6	32 7	38·7	83·9	27·7	...	...	7·9	Sum 2·26

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APRIL, 1866.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·030	46·8	31·4	38·9	93·0	25·0	Calm.	S.W.	7·5	0·01
2	28·999	46·0	30·0	37 9	100·9	20·5	N.E.	N.E.	8·7	0·07
3	29·196	48·7	36·1	40·4	87·8	33·0	N.	N.	8·5	0·04
4	·202	46·2	30·9	37·5	82·1	24·0	N.E.	E.S.E.	9·5	0·21
5	·386	50·6	32·4	40·3	97·0	27·2	E.	E.	7·0	0·01
6	·541	56·5	39·7	46·2	104·4	34·6	E.	E.	6·0	
7	·467	48·0	39·2	41·8	92·4	34·9	E.	N.E.	10·0	0·01
8	·599	55·0	41·1	46·4	106·9	38·8	E.	E.	6·5	
9	·499	42·4	39·2	39·8	56·9	36·4	E.N.E.	N.	10·0	0·09
10	·388	49·3	38·7	42·3	72·9	35·1	S.	S.E.	10·0	0·01
11	·051	52·6	41·2	45·9	86·0	35·5	S.	S.E.	10·0	0·58
12	·294	54·4	43·2	47·2	105·5	38·8	W.	S.W.	9·5	0·30
13	·388	55·7	48·1	51·1	99·0	44·3	S.W.	S.W.	6·0	
14	·535	53·9	40·9	46·0	109·3	35·5	S.W.	W.	6·5	0·08
15	·784	56·6	39·2	46·9	105·5	29·5	W.	S.W.	9·5	0·05
16	·465	55·1	45·9	49·6	96·5	41·5	S.W.	S.W.	9·5	0·02
17	·512	54·7	45·6	49·3	108·2	40 0	W.	W.	8·5	
18	·540	57·9	36·2	46·5	114·0	27·0	W N W	N.W.	1·5	
19	·369	57·7	34·3	45·7	108·1	27·0	S.W.	S.W.	9·0	
20	·411	55·8	40·1	46·8	111·5	31·0	S.W.	W.	6·5	0·01
21	·670	59·8	41·0	48 8	115·0	33·5	W.	W.	7·0	
22	·913	61·8	33·4	47·3	116·2	27·0	Varbl.	E.	2·0	
23	·871	56·0	38·7	45·9	105·1	30·7	E.	E.	0·5	
24	·697	59·1	38·0	47·8	105·9	31·0	E.S.E.	E.S.E.	0·2	
25	·593	66·9	36·5	51·7	115·0	25·7	E.	E.S.E.	4·0	
26	·503	72·8	36·2	53·6	121·8	25·5	E.	S.	1·7	0·19
27	·322	71·9	53·0	59·5	122·0	44·4	S.E.	S.	5·2	0·01
28	·042	62·1	51·0	54·8	86·9	42·8	S.	S.W.	10·0	0·60
29	·339	43·8	35·9	38·6	89·0	32·7	E.	E.	9·5	0·03
30	·312	46·6	32·1	38·3	102·5	24·9	E.	E.	7·5	
Means	29·431	54 8	39·0	45·8	100·6	32·6	...	...	6·9	Sum 2·32

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MAY, 1866.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·067	40·9	35·3	37·2	57·9	29·7	N.E.	N.E.	10·0	0·19
2	·127	48·9	32·4	38·3	104·8	29·0	N.	N.	8·0	0·06
3	·170	49·8	34·2	39·1	99·0	29·0	S.E.	N.	9·5	0·03
4	·389	53·5	25·7	39·5	109·5	18·3	N N W	W.	3·2	
5	·617	55·8	28·5	42·9	106·0	20·2	W S W	W.	4·5	0·01
6	·786	55·9	40·1	47·4	100·1	32·8	N.W.	N.W.	10·0	
7	·785	62·0	38·2	49·7	121·5	28·3	N.W.	N.W.	3·2	
8	·589	58·6	33·8	45·5	110·6	24·8	W.	W.	8·0	0·03
9	·346	58·6	46·7	51·0	118·2	42·0	W.	N.W.	8·5	0·01
10	·534	57·8	43·2	49·4	104·3	34·5	N.W.	N.W.	10·0	0·56
11	·303	57·8	46·2	50·4	110·1	41·0	N.W.	W.	7·0	0·11
12	·220	56·0	41·1	46·5	117·2	35·7	N.W.	N.	9·5	0·14
13	·609	53·2	37·3	44·6	109·0	27·5	N.	N.	7·0	
14	·681	57·7	38·9	47·8	122·5	34·2	N.	N.	7·5	
15	·872	54·4	39·8	45·3	113·9	34·1	N.E.	N.E.	4·5	
16	·906	59·0	28·2	43·5	117·4	21·4	E.	S.	6·5	
17	·802	63·0	31·8	47·4	117·8	24·0	S.	S.	3·5	
18	·703	67·0	30·3	49·5	121·0	22·3	S.	S.	0·5	
19	·692	70·9	38·2	54·4	117·3	26·2	S.	S.	0·0	
20	·770	66·2	38·2	53·0	115·3	27·2	S.E.	E.	0·0	
21	·889	62·8	45·1	53·8	111·8	35·5	S.E.	E.S.E.	0·0	
22	·787	61·6	41·0	50·8	111·0	29·3	S.E.	E.	0·0	
23	·655	64·7	34·3	49·8	116·4	23·5	E.	N.E.	3·5	
24	·428	55·8	35·0	45·6	105·2	24·7	E.	E.	6·0	
25	·307	57·6	39·4	48·5	113·9	30·5	E.	E.	2·0	
26	·187	60·6	43·8	50·6	122·5	38·3	E.	N.E.	10·0	0·73
27	·252	64·4	44·8	52·3	115·3	38·6	N.	N.	9·5	
28	·371	66·8	37·1	52·1	121·7	28·2	N.W.	W.	4·0	
29	·379	60·9	39·1	50·4	119·2	28·7	W.	N N W	5·0	
30	·445	59·8	31·8	46·0	111·0	22·8	N.	N.	9·0	
31	·228	59·6	47·9	52·1	98·2	40·2	S.E.	S.	10·0	
Means	29·513	58·8	37·7	47·5	111·0	29·8	...	...	5·8	Sum 1·87

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JUNE, 1866.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain
	in.	°	°	°	°	°				in.
1	29·187	67·8	50·0	58·0	125·0	41·9	S.E.	E.	7·0	0·28
2	·394	72·1	45·3	57·3	129·2	35·8	S.	S.	4·5	
3	·311	75·7	53·9	64·6	126·7	43·3	S.E.	S.	6·5	0·04
4	·409	68·8	54·0	59·6	123·5	49·1	S.	S.	8·5	0·24
5	·362	58·1	51·0	53·4	106·2	47 0	S.	S.S.E.	9·5	0·24
6	·562	61·6	51·4	54·6	110·0	47·3	S.	S.	10·0	
7	·658	66·7	52·8	58·2	118·0	46·0	S.	S.	9·0	
8	·776	70·9	53·2	60·4	119·5	45·7	S.	S.	7·0	
9	·755	76·8	42·3	59·7	125·7	34·0	S.	S.	9 5	
10	·602	73·8	56·8	63·0	127·9	48·8	S.	S.	6·0	
11	·602	64·9	47·9	54·6	118·2	38·0	W.	W.	9·5	0·23
12	·165	60·0	53·0	55·0	104·7	48·9	S.W.	S.W.	10·0	0·13
13	·305	63·9	49·1	53·8	121·0	44·0	S.W.	N.W.	9·0	0·09
14	·524	62·8	43·0	52·3	104·7	32·5	S.W.	N.W.	9·5	
15	·493	64·3	47·4	54·0	112·0	37·7	W.	S.W.	9·5	0·03
16	·293	58·0	50·0	52·5	116·5	43·7	W N W	W.	6·5	0·10
17	·279	58·3	39·7	48·2	116·3	33·3	N.W.	N.W.	5·5	0·37
18	·084	60·8	44·3	50·2	104·3	36·0	S.W.	S.W.	9·5	0·15
19	·220	69·4	48·9	54·5	112·7	45·6	S.W.	W.	8·0	0·02
20	·564	68·6	40·4	51·5	107·5	31·7	W.	S.W.	10·0	0·02
21	·428	71·8	55·1	61·8	124·5	48·9	S.W.	S.W.	7·5	0·19
22	·498	67·0	54·1	58·7	125·9	51·2	S.W.	S.W.	3·5	
23	·671	75·8	44·1	59·0	133·1	37·5	S.W.	S.W.	0·5	
24	·726	74 3	48·3	59·8	125·8	38·9	S.W.	S.W.	3·5	
25	·662	71·6	44·0	57·5	125·0	35·0	S.W.	N.E.	6·5	
26	·594	78 8	56·5	66·0	136·8	44·7	N.E.	N.E.	3·0	
27	·481	81·0	51·4	65·0	139·2	42·5	N.E.	E.	3·2	0·21
28	·530	80·0	54·0	66·1	128·3	46·4	S.	N.	0·0	
29	·543	76·1	54·2	63·5	131·0	44·5	N.E.	N.E.	1·5	
30	·404	77·8	54·2	64·1	132·2	45·5	N.E.	W.	4 0	0·83
Means	29·469	69·1	49·7	57·9	121·0	42·2	...	...	6·6	Sum 3·17

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JULY, 1866.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·089	64·3	51·0	56·2	120·1	47·0	W.	N.W.	7·0	0·14
2	28·952	62·6	48·9	53·6	121·0	42·5	W.	W.	7·0	0·40
3	28·934	59·6	47·0	51·2	116·0	42·5	W.	S.W.	10·0	0·30
4	29·031	66·8	48·0	52·8	114·3	39·4	S.W.	N.W.	10·0	0·23
5	·056	61·3	48·2	53·8	117·2	41·7	S.W.	W.	6·5	0·13
6	·182	63·5	48·2	53·0	125·2	42·4	W.	N.W.	8·7	0·03
7	·573	60·6	51·0	54·0	113·3	46·8	N.	N.W.	9·0	
8	·705	63·5	48·1	54·8	101·5	41·0	W.	W.	10·0	0·03
9	·763	70·3	56·1	61·5	126·7	52·0	N.W.	N.W.	7·7	
10	·876	77·1	56·5	65·1	127·9	53·2	N.W.	N.W.	1·5	
11	·850	78·0	51·2	65·1	132·6	42·6	N.W.	N.W.	9·2	
12	·729	83·2	52·1	67·5	131·3	43·6	N.	S.	0·3	
13	·647	73·1	57·5	64·1	129·8	49·1	N.E.	N.W.	2·0	
14	·702	75·1	54·4	64·2	131·6	43·5	S.W.	S.W.	6·7	
15	·698	81·1	50·5	65·8	138·5	40·7	S.W.	S.W.	0·5	
16	.630	74·5	60·7	66·8	130·4	52·1	E.S.E.	E.S.E.	4·2	
17	·594	67·8	55·1	60·2	.92·9	44·8	N.E.	E.	10·0	
18	·552	69·6	48·0	57·6	139·8	37·0	E.	E.	6·5	
19	·445	75·9	44·1	60·2	137·3	36·0	N.E.	N.	4·0	
20	·625	72·7	45·2	57·3	135·6	34·2	S.E.	N.	3·5	
21	·641	77·6	49·5	63·0	137·0	38·4	N.E.	N.E.	3·0	
22	·686	70·5	50·7	58·1	136·3	40·2	E.N.E.	N.E.	5·0	
23	·570	69·2	40·2	55·3	132·7	31·2	N.E.	E.	2·5	
24	·625	62·3	48·1	54·5	117·5	35·2	N.E.	N.E.	10·0	
25	·784	63·6	48·9	55·3	117·6	40·5	N.E.	N.	10·0	
26	·676	68·0	50·3	58·6	127·7	38 3	E.	N.	9·5	0·05
27	·335	65·5	55·0	58·9	104·2	47·5	N.	W.	10·0	0·06
28	·203	66·5	57·3	60·8	107·8	53·0	W.	S.W.	10·0	0·15
29	·155	65·2	56·6	58·0	125·9	51·3	N.W.	N.W.	10·0	
30	·381	65·9	46·0	54·7	132·7	34·6	N.W.	N.W.	7·5	0·01
31	·301	59·2	42·0	49·7	118·4	31 9	N.W.	N.N.W	10 0	0·02
Means	29·484	68·8	50·5	58·4	123·9	42 4	...	...	6·8	Sum 1·55

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AUGUST, 1866.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·432	69·5	48·6	54·7	136·0	32·2	N N W	W.	4·7	0·34
2	·143	68·0	54·1	59·8	116·9	50·1	S.	N.W.	10·0	0·01
3	·334	71·1	53·6	59·6	119·8	45·9	W.	W.	8·5	
4	·297	65·8	51·2	56·5	125·1	41·1	N.W.	N.W.	4·5	0·01
5	·349	64·6	49·2	54·9	126·4	39·5	N.W.	N.W.	7·5	0·17
6	29·295	59·2	47·8	51·7	97·2	35·2	W.	S.W.	10·0	0·53
7	28·999	74·6	52·0	57·8	120·4	47·3	W.	W.	6·5	0·02
8	29·215	64·4	49·4	55·5	119·0	40·4	W.	S.W.	8·0	0·06
9	·142	62·7	48·4	54·7	127·7	40·3	N.W.	W.	4·0	
10	·290	62·2	47·8	53·6	125·7	39·4	N.W.	N.N.W	5·5	0·17
11	·665	65·5	41·6	54·4	129·2	32·4	N.W.	N.W.	8·5	0·33
12	·278	64·0	50·3	55·8	101·3	47·4	S.W.	S.W.	10·0	0·02
13	·486	66·5	53·7	58·2	131·6	47·7	S.W.	S.W.	10·0	0·03
14	·363	66·4	54 0	58·9	115·2	50·8	S.W.	N.W.	9·5	
15	·524	61·7	53·6	56·2	99·6	48·6	N.W.	N.W.	9·7	
16	·297	62·9	51·3	56·2	107·9	44·8	W S W	W.	6·5	0·03
17	·375	59·6	48·0	52·7	116·0	39·0	N.W.	N.W.	8·5	
18	·505	68·0	42·3	55·1	133·1	32·2	N.W.	W N W	3·5	
19	·357	69·8	38·7	55·0	118·0	30·0	S.W.	S.W.	7·5	0·04
20	·261	68·9	53·8	60·1	128·1	48·8	S.W.	W.S.W	10·0	
21	·396	68·3	53·6	59·4	112·3	43·9	S.W.	S.W.	9·0	
22	·534	68·0	45·0	55·3	118·0	38·3	S.W.	W.S.W	10·0	0·01
23	·565	74·8	48·2	59·7	123·5	37·0	W.	S.	6·5	0·01
24	·587	73·9	56·2	63·4	118·5	47·7	S.	S.	8·0	
25	·612	70·8	45·5	57·8	122·1	36·5	S.	S.	9·0	0·03
26	·528	71·6	54·8	62·2	124·0	41·0	S.	S.	9·5	
27	·386	68·8	57·8	62·6	123·9	50·5	S.W.	S.	5·5	0·09
28	29·081	63·8	54·5	57·9	107·9	48·6	S.	S.W.	8·0	0·21
29	28·925	57·8	47·1	52·0	100·4	38·5	N.W.	N.W.	10·0	0·79
30	29·289	64·3	50·0	56·5	117·9	42·3	N.	W.	2·0	
31	·414	66·7	40·3	53·7	126·2	32·2	N.E.	N.	2·5	0·07
Means	29·351	66·6	49·6	56·8	119·0	41·6	...	...	7·5	Sum 2·97

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SEPTEMBER, 1866.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·416	65·5	51·8	57·7	110·2	44·8	W.	S.W.	4·0	0·90
2	·087	62·7	52·0	54·8	114·8	47·2	W.	W.	7·5	0·04
3	·427	61·8	46·2	53·1	117·0	36·7	N.W.	W.	4·0	0·16
4	29·171	65·8	50·0	57·1	93·5	40·6	S.W.	S.W.	10·0	0·74
5	28·899	65·1	58·2	59·6	112·1	56·1	S.W.	S.W.	10·0	0·40
6	29·113	62·6	52·2	56·6	103·2	45·5	S.W.	S.	9·5	0·04
7	·141	63·6	55·5	58·2	104·5	49·8	S.W.	W.	10·0	
8	·241	63·6	53·9	56·9	86·5	48 0	N.W.	N.W.	9·5	0·03
9	·295	62·3	47·5	54·5	102·1	38·0	W.	S.W.	9·5	0·41
10	·055	64·0	54·0	57·4	113·9	49·2	S.W.	S.W.	6·5	0·17
11	·074	60·7	50·2	54·6	99·9	44·2	W.	N.W.	10 0	
12	·489	57·8	44·1	48·6	96·3	35·5	W N W	W.	10·0	0·16
13	·369	59·0	48·4	53·4	114·6	46 0	N.W.	W.	9·5	0·37
14	·088	58·5	51·8	54·5	110·3	46·1	W.	W.	6·0	0·06
15	29·266	61·0	47·2	52·8	115·2	39·7	W.	W.	6·5	0·18
16	28·912	59·9	46·2	52·7	98·5	40·0	W.	S.	9·5	0·37
17	29·285	57·7	46·5	50·6	119·3	38·8	N.W.	N.W.	6·5	0·15
18	·590	58·5	37·1	47·4	94·0	28·2	S.W.	S.W.	10·0	0·18
19	·458	62·0	50·0	54·7	115·0	43·1	S.W.	S.W.	7·5	
20	·497	59·2	46·8	52·2	84·5	37·3	S.W.	S.W.	10·0	0·10
21	29·176	56·9	48 4	51·7	105·7	41·0	W.	W.	8·5	0·61
22	28·843	54·2	44·9	48·5	93·4	41·2	W.	N.W.	9·5	0·01
23	28·954	56·9	38·6	47·1	97·8	31·5	N.W.	N.W.	9·5	0·49
24	29·218	56·8	45·1	50·3	108·8	35·0	W.	W.	6·5	
25	·488	60·8	37·4	49·7	109·8	27·0	S.	S.	2·0	0·41
26	·490	61·8	51·9	56·0	96·0	48·2	S.	S.	9·5	0·06
27	·471	62·0	50·8	55·7	95·5	45·4	S.	S.	9·5	0·41
28	·261	62·8	52·0	56·0	74·8	47·3	S.	S.	9·5	0·22
29	·439	59·6	53·0	55·4	78·6	50·0	S.	S.	8·0	0·29
30	·591	63·8	54·4	58·5	81·9	49·4	S.	S.	10·0	0 01
Means.	29·260	60·9	48·9	53·9	100·6	42·4	...	...	8.3	5mm 6·97

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OCTOBER, 1866.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·637	59·8	53·8	56·0	113·5	51·0	E.N.E.	E.N.E.	7·5	0·01
2	·562	58·8	50 0	53·4	72·9	46·7	N.E.	E.N.E.	10·0	0·01
3	·619	67·6	50·2	58·6	119·0	50·0	E.	E.	7·5	
4	·654	60·2	56·7	58·2	73·1	53·0	E.	S.E.	10·0	0 01
5	29·839	58·4	54·0	56·1	69·0	50·5	N.E.	N.E.	10·0	
6	30·018	55·8	51·8	53·0	60·0	47·8	N.E.	N.E.	10·0	
7	30·009	60·8	51·9	55·7	107·0	47·8	N.E.	E.N.E.	6·5	
8	29·919	57·3	46·6	50·7	96·5	42·0	E.S.E.	N.E.	5·0	
9	·760	59·2	46·1	52·6	105·5	35·2	E.	E.	8·0	
10	·608	56·2	46·9	51·0	110·3	36·8	E.	E.	6·5	
11	·587	55·6	47·1	50·9	74·0	38·6	E.	E.	9·5	
12	·552	55·7	46·1	50·7	100·8	37·0	N.E.	E.	10·0	
13	·484	54·3	41·2	47·7	101·7	35·1	N.	N.	5·0	0·02
14	·481	51·2	41·9	46·7	57·6	34·9	N.	N.	10·0	0·05
15	·709	53·8	32·4	43·3	104·2	24·5	N.N.E.	N.	8·0	
16	·729	54·5	33 4	44·6	104·5	26·2	N.E.	E.	5·0	
17	·519	55·8	36·3	45·5	93·2	28·7	S.E.	S.E.	5·0	0·19
18	·351	57·8	43·1	50·2	62·9	38·7	S.E.	S.S.E.	10·0	0·17
19	·554	63·1	49·9	56·3	99·3	46·4	S.	S.	8·5	
20	·714	60·2	53·0	56·6	80·4	43·2	S.	S.E.	9·5	0·02
21	·523	60·9	55·0	57·4	73·9	49·0	S.	S.	9·0	0·39
22	·481	57·8	42·0	50·4	78·1	41·0	S.	N.E.	9·5	0·15
23	·687	58 0	39·3	49·3	94·9	30·5	S.W.	S.W.	9·5	0·07
24	·397	56·4	48·3	51·5	82·7	41·3	S.W.	S.W.	6·0	0·42
25	·240	49·8	39·3	44·3	107·8	32·3	S.W.	N.	7·5	.0·08
26	·504	49·8	41·1	45·1	71·1	37·9	N.	N.	10·0	
27	·545	54·6	35·9	44·9	66·2	27·7	N.E.	S.E.	10·0	0·08
28	·710	53·2	44·2	48·3	94·9	42·0	N.	N.	1·0	
29	·919	51·7	30·2	40·7	69·2	24·0	N.	W.	9 0	0·02
30	·377	56·4	38·8	48·2	60·0	38·8	S.W.	W N W	10·0	0·05
31	·660	53·7	33·0	42·8	94·0	26·2	W N W	W.	1·0	
Means	29·624	56·7	44·5	50·3	87·0	39·0	...	...	7·9	Sum 1·74

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NOVEMBER, 1866.

Days of Month	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·499	55·5	38·1	48·0	70·9	33·5	W.	S.W.	10·0	0·03
2	·331	57·9	48·2	52·5	91·1	42·5	W.	W.	10·0	0·17
3	·273	55·0	44·0	49·9	73·8	40·0	S.W.	N.W.	8·0	
4	·536	52·9	35·4	44·3	75·1	29·5	W.	W.	10·0	
5	·463	56·5	44·2	51·2	70·0	41·0	S.W.	S.W.	10·0	0·03
6	·625	55·1	48·9	51·4	90·0	41·7	W.N.W	W.	4·5	
7	·613	55·1	44·6	50·0	60·5	36·0	S.W.	W.	6·5	0·04
8	·380	55·8	49·5	52·5	70·3	45·0	S.W.	S.W.	9·5	0·29
9	·441	47·7	36·2	42·0	97·8	28·0	N.W.	W.	4·0	
10	·683	50·0	26·5	37·3	83·6	22·1	N.W.	S.W.	5·0	0·49
11	·343	54·2	41·0	48·5	77·1	40·0	W.S.W	N.W.	3·5	
12	·453	57·3	38·3	46·6	63·8	30·2	W.	W.	10·0	0·42
13	·192	54·7	26·1	50·4	84·9	43·0	W.	N.W.	7·0	0·86
14	·539	48·6	39·2	43·5	90·5	32·0	N.W.	N.W.	4·5	
15	29·603	49·0	33·7	41·5	54·7	27·2	W.	W.	9·5	0·03
16	28·890	54·8	40·1	48·8	58·2	37·0	S.W.	W.	9·5	0·14
17	29·796	42·0	30·2	35·6	78·8	23·0	N.	N.	0·0	0·18
18	·366	52·8	31·3	43·2	67·1	23·9	N.	N.	9·5	0·23
19	·520	38·6	33·2	35·7	69·9	27·7	N.	N.	7·5	
20	·747	36·4	27·6	32·0	71·8	21·9	N.	N.	0·0	
21	·672	43·7	25·6	34·7	80·0	18·8	N.	N.	6·5	
22	·757	44·8	30·2	39·2	46·8	27·0	N.	N.E.	10·0	0·01
23	·385	49·1	39·1	44·4	52·9	34·0	S.	S.W.	10·0	0·06
24	·498	47·6	32·3	39·0	58·6	25·8	N.W.	N.W.	9·0	0·05
25	·079	45·8	34·3	40·8	80·0	28·0	W.N.W	N.W.	2·5	0·01
26	·538	49·8	36·4	42·3	83·0	27·3	N.W.	N.	8·0	
27	·544	48·8	39·7	45·0	64·9	33·5	N.W.	N.	8·5	
28	·809	45·8	30·2	37·6	49·9	23·2	N.E.	N.E.	10·0	
29	·789	45·8	32·0	40·4	52·1	28·8	S.	S.	10·0	
30	·577	40·7	30·8	35·3	73·9	24·9	S.E.	S.	3·0	
Means.	29·498	49·7	36·9	43·4	71·4	31·2	...	...	7·2	Sum 3·04

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DECEMBER, 1866.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature.					Direction of the Wind.		Mean amt. of Cloud (0—10)	Rain.
		In the Shade.			Highst. insun's rays.	Lowst. on the grass.	A.M.	P.M.		
		Highest.	Lowest.	Mean.						
	in.	°	°	°	°	°				in.
1	29·309	32·7	25·7	30·0	32·7	20·0	S.E.	S.	10·0	
2	·368	45·1	25·7	34·9	71·7	19·7	S.	S.	5·0	0·06
3	·324	54·7	40·0	47·5	55·0	35·9	S.W.	S.W.	10·0	0·22
4	·271	54·9	50·0	53·2	58 2	49·4	S.W.	W.	10·0	0·14
5	·319	54·8	50·0	53·2	56 5	44·3	S.W.	W.	10·0	0·68
6	·296	56·3	45·1	50 6	57·9	40·2	S.W.	S.W.	10·0	0·05
7	·078	53·0	39 5	46·1	54·0	36·0	S.W.	S.W.	9·0	0·01
8	·244	42·8	30·2	35·9	71·6	24·0	N.W.	N.W.	3·5	
9	·766	53·0	25·1	40·3	53·0	20·5	S.W.	S.W.	10·0	0·04
10	·642	47·0	38·1	43·0	53·0	32·2	W.	W.	5·5	
11	·833	39·3	26·3	32·3	51·2	21·9	W.	W.	10·0	0·20
12	·370	53·0	37·0	47·2	55·5	34·0	W.	W.	10·0	0·13
13	·026	54·8	46·4	50·3	55·0	38·5	W.S.W	W.	9·0	0·48
14	29·006	47·6	38·1	42·9	58·8	31·7	N.W.	N.W.	4·5	
15	28·945	49·9	36·3	44·0	49·9	27·2	W.	W N W	9·0	0·50
16	29·316	46·9	40·2	44·2	47·0	33·0	W N W	W.	8·5	0·03
17	·709	53·4	38·2	47·2	67·3	29·6	W.	W.	8·0	0·01
18	·798	52·5	44·9	49·7	54·2	41·1	W.	S.W.	9·0	0·01
19	29·898	46·7	42·8	44·5	76·0	34·1	N.W.	N.W.	0·5	
20	30·001	39 6	23·1	31·8	68·3	20·0	N.W.	N.W.	1·0	
21	29·952	42·9	24·2	36·1	58·0	20·6	N.W.	N.W.	10·0	0·01
22	·954	44·4	31·3	40·2	51·6	24·4	N.W.	N.W.	10·0	
23	·928	46·6	40·1	42·9	58·0	36·2	S.W.	S.W.	9·5	
24	·853	43·5	38·0	40·5	50·8	31·0	W.	S.	9·5	
25	·695	49·3	34·5	42·5	49·8	26·5	S.	S.	10·0	0·48
26	·551	49·3	37·9	43·9	71·8	30·2	W.	W.	5·0	0·14
27	·436	48·0	39·5	43·5	60·6	31·6	W.	N.W.	5·0	0·01
28	·591	49·4	40·5	45·7	70·4	33·7	N.W.	N.N.W	7·5	
29	29·280	50·3	42·8	46·7	55·5	33·9	N.N.W	S.W.	9·5	0·03
30	28·874	39·6	33·8	37·0	70·6	27·7	W.	W.	2·5	0·01
31	28·835	35·8	26·3	31·3	68·7	21·0	S.W.	W.	5·5	
Means.	29·493	47·6	36·5	42·6	58·5	30·6	...	...	7·6	Sum 3·24

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JANUARY, 1867.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	28·954	30·0	22·6	26·1	45·7	20·8	N.E.	N.	3·0	0·42
2	28·755	28·4	18·0	23·1	31·0	17·1	N.E.	N.	5·0	0·14
3	29·311	28·1	14·7	22·5	53·8	12·0	N.E.	N.E.	5·0	
4	·494	16·8	2·3	9·3	51·8	2·3	N.E.	N.E.	0·0	
5	29·456	33·0	1·0	18·2	39·0	1·0	N.E.	S.E.	10·0	0·36
6	28·907	44·0	30·0	38 0	75·7	28·0	S.S.E.	S.	8·0	0·40
7	·675	54·5	37 6	47·7	63·0	30·0	S.S.W.	S.W.	9·5	0·70
8	·430	50·2	39·0	45·3	71·4	36·0	W.	W.	9·0	0·08
9	·465	47·2	36·8	42·2	50·0	29·5	S.W.	S.W.	10·0	0·05
10	28·817	39·6	36·4	38·0	46·8	33·0	N.N.W	N.N.W	10·0	
11	29·242	34·6	28·4	31·6	51·0	20·3	N.	N.E.	6·7	
12	·171	31·7	21·3	27·1	37·0	16·6	W.S.W	N.	4·5	0·10
13	·271	27·5	12·5	21·0	67·4	16·2	N.	N.	0·0	
14	·393	26·5	9·4	18·6	63·7	10·5	N.	N.E.	2·0	
15	·491	28·0	11·7	20·4	54·6	13·7	N.W.	N.	0·0	
16	·373	31·7	17·1	26·0	66·6	16·0	N.E.	N.E.	5·5	
17	·128	28·7	20·7	25·1	50·0	19·4	N.	N.E.	10·0	
18	·084	29·8	21·5	25·7	45·4	18·4	N.E.	N.E.	10·0	
19	·374	31·0	22·1	26·9	67·1	20·1	N.E.	E.	5·0	
20	·362	29·7	22·2	26·6	48·4	17·7	S.E.	S.E.	10·0	
21	·362	28 0	25·3	26·8	37·8	19·6	S.E.	S.E.	10·0	
22	·504	33·0	20·9	25·4	48·0	20·0	E.	S.E.	10·0	0·24
23	·207	51·6	33·0	43·8	61·9	31·8	S.	S.	10·0	0·12
24	·003	52·5	44·6	49·2	76·7	39·7	S.W.	S.W.	6·0	0·27
25	·159	47·3	42·5	44·8	82·4	34·0	W.S.W	N.N.W	9·5	
26	·601	46·0	35·8	39·8	54·9	28·1	W.	W.	10·0	0·32
27	·504	52·4	45·9	49·5	61·2	42·0	N.N.W	W.	10·0	0·01
28	·399	52·2	48·2	49·8	56·7	43·0	W.S.W	W.	10·0	0·12
29	·491	51·8	39·6	45·3	62·2	32·0	W.S.W	W.S.W	9·0	0·09
30	·269	52·0	42·5	46·4	57·4	37·9	W.S.W	W.S.W	10·0	0·48
31	·702	45·7	34·2	39·7	77·7	26·6	N.W.	N.W.	8·5	0·12
Means.	29·205	38·2	27·0	32·9	56·7	23·7	...	...	7·1	Sum 4·02

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FEBRUARY, 1867.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Temperature. In the Shade. Lowest.	Temperature. In the Shade. Mean.	Temperature. Highst. insun's rays.	Temperature. Lowst. on the grass.	Direction of the Wind. A.M.	Direction of the Wind. P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·639	51·2	34·6	43·9	56·2	27·7	S.W.	S.S.W	10·0	0·05
2	·893	47·4	40·1	43·2	79·8	32·6	N.N.W	N.W.	5·0	0·01
3	·982	46·3	29·6	37·5	69·7	19·2	W.	W.	7·5	0·01
4	29·105	49·4	34·2	42·4	53·4	28·0	S.	W.	10·0	0·16
5	28·870	48·0	34·5	41·0	53·8	27·2	W.S.W	W.S.W	10·0	0·38
6	28·874	50·0	37·4	42·8	83·2	34·8	W.	N.W.	8·0	0·07
7	29·201	46·0	34·2	38·4	79·9	27·7	N.W.	N.W.	1·0	0·27
8	28·947	51·7	40·0	46·9	59·2	37·0	W.	N.W.	10·0	0·32
9	29·478	49·0	42·1	45·1	90·0	35·1	W.	N.W.	5·5	0·18
10	·477	51·7	42·9	47·5	73·0	36·9	S.W.	S.W.	10·0	0·37
11	·655	47·7	35·4	40·4	76·5	29·0	N.W.	N.W.	9·0	0·03
12	·784	48·7	36·7	44·2	56·8	31·5	W.	WNW	10·0	0·01
13	·904	47·8	42·4	45·3	54·8	39·1	N.W.	N.W.	10·0	
14	·821	48·2	42·9	45·8	69·9	38·5	E.	E.S.E	9·0	0·01
15	·416	52·8	39·3	45·9	81·3	30·9	E.	S.	9·0	0·33
16	·301	52·0	42·1	47·5	76·9	38·8	S.	S.	10·0	0·01
17	·541	51·7	45·2	48·1	76·0	39·8	S.	S.	10·0	0·07
18	·935	48·0	40·4	44·3	69·0	32·0	S.	S.	9·5	
19	29·874	48·6	39·3	44·2	54·2	37·1	S.	S.W.	10·0	0·01
20	30·027	52·9	42·9	47·8	100·8	37·0	S.W.	S.W.	4·0	
21	30·070	50·7	40·9	46·0	60·8	32·8	S.W.	S.W.	10·0	
22	29·991	48·7	43·9	46·1	58·5	38·5	S.W.	WNW	10·0	
23	30·044	51·8	39·2	44·7	91·2	34·0	N.W.	N.W.	6·5	0·01
24	29·785	50·8	37·9	44·4	86·9	30·2	W.	W.	9·0	
25	·749	48·5	33·4	41·0	87·0	27·0	N.W.	WNW	9·0	0·03
26	·561	42·8	36·1	39·6	48·8	34·6	N.W.	N.W.	10·0	0·06
27	·581	39·1	34·0	36·6	46·9	31·7	W.	W.	10·0	0·09
28	29·744	40·9	32·0	35·8	65·9	29·2	E.	E.	8·0	
Means.	29·598	48·7	38·3	43·4	70·0	32·8	...	...	8·6	2·48

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MARCH, 1867.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature.					Direction of the Wind.		Mean amt. of Cloud (0—10)	Rain.
		In the Shade.			Highst insun's rays.	Lowst. on the grass.	A.M.	P.M.		
		Highest.	Lowest.	Mean.						
	in.	°	°	°	°	°				in.
1	30 099	39·7	25·6	32·6	92·3	20·3	E.	E.N.E.	4·5	
2	·249	38·2	26·9	32·2	90·0	20·3	N.	E.	4·5	
3	30·164	42·6	25·3	33·1	85·1	21·5	E.	N.E.	2·5	
4	29·955	42·6	29·5	36·0	93·7	26·3	E.	N.E.	7·0	
5	·677	42·6	33·2	37·4	64·7	28·8	N.E.	N.E.	10·0	0·03
6	·342	39·3	31·4	34·2	75·0	26·2	N.E.	N.E.	7·5	0·04
7	·166	43·7	29·6	31·5	89·1	26 0	E.	E.S.E	10·0	0·02
8	·085	36·9	29·9	32·7	79·0	25·7	E.	E.	7·5	
9	29 020	39·8	28·5	32·9	70·1	23·9	E.	E.	10·0	0·31
10	28·843	41·9	34·0	37·6	55·1	31·2	N.E.	N.N.E.	10·0	0·02
11	29·178	38·8	32·3	34·9	50·1	30 9	E.	E.	9·5	0·39
12	·278	34·9	29·3	31·4	51·9	28·2	E.	E.	10·0	0·10
13	·366	32·8	24·1	27·9	64·9	24·1	E.	E.	10·0	0·68
14	·062	33.9	26·6	30·4	48·0	26·0	E.	E.	10·0	0·04
15	·299	35.5	28·8	31·8	63 0	26·5	E.	E.	9·0	
16	·493	36·6	19·3	27·4	86·9	19·1	N.	N.E.	4·0	
17	29·336	34·5	20·3	27·8	78·0	19·0	E.	E.S.E.	5·0	0·05
18	28·999	32·7	26·4	28·9	42·5	23·7	E.	E.	10·0	0·18
19	28·875	33·3	27·3	30·1	38·2	27·3	E.	E.N.E.	10·0	0·41
20	29·189	35·5	29·4	31·7	66·9	28·0	N.	N.E.	10·0	
21	·360	38·9	23·2	30·7	87·2	19·3	E.	S.E.	6·5	0·21
22	·180	44·8	29·1	35·8	92·6	27·6	E.	E.	10·0	0·04
23	·163	47·7	33·3	40·6	65·2	28·1	S.	S.	10·0	0·66
24	·098	54·4	36·3	44·8	103·5	28·5	S.	S.	8·5	0·02
25	29·160	51·2	42·9	45·9	66·3	37·0	S.S.W.	S.	10·0	0·23
26	28·907	54·1	42·5	46·1	97·2	39 7	W.S W	W.	9·5	0·19
27	·872	52·0	40·3	44·2	103·9	34·1	S.S.W.	W N W	9·5	0·10
28	28·962	48·8	31·5	39·8	105·5	25·4	W.	S.W.	0·5	
29	29·185	49·4	35·2	41·6	114·6	27·6	N.W.	N.W.	9·5	0·01
30	·319	49·8	34·0	41·8	95·8	27·1	W.	W.	5·5	0·04
31	·751	45.5	34·4	39·4	90 3	27·8	N.	N.	9 0	
Means	29·311	41·7	30·3	35·3	77·6	26·6	...	...	8·0	Sum 3·77

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APRIL, 1867.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·968	52·2	29·2	41·0	100·7	22·8	N.	N.	7·5	
2	·782	61·0	42·0	50·0	102·0	42·0	W.	N.W.	7·5	
3	·818	59·1	39·2	47·8	114·7	30·1	N.W.	N.W.	5·0	
4	·429	55·8	44·2	48·3	98 0	40·5	W.	N.W.	9·5	0·01
5	·613	55·8	37·2	45·7	105·9	29·8	N.W.	W.	4·0	
6	·588	56·6	43·6	48·9	102·5	36·7	W N W	W N W	8·0	
7	·474	56·0	44·5	48·6	99·0	41·7	W.	S.W.	9·0	0·11
8	·037	51·0	42·8	46·3	78·9	36·9	W.	N.W.	10·0	0·20
9	·298	52·9	41·6	45·7	102·9	35·3	N.W.	N.W.	8·0	0·06
10	·400	53·0	33·2	41·8	84·8	26·2	N.W.	S.W.	10·0	0·09
11	·245	51·0	41·3	44·9	98·9	36·1	N.W.	N.W.	9·5	0·03
12	·719	54·3	29·8	41·3	110·7	23·0	N.	N.	2·5	0·01
13	29·496	54·5	39·5	45·7	95·5	35·0	W.	W.	10·0	0·10
14	28·975	55·7	44·5	46·6	88·9	42·9	S.W.	N.W.	10·0	0·54
15	29·123	56·0	43·1	48·0	105·1	37·1	N.W.	N.W.	7·0	0·04
16	·242	52·7	41·7	45·5	64·0	34·0	W.	W.	10 0	
17	·414	58·8	42·8	50·0	110·0	42·0	W.	N.W.	9·5	
18	·414	57·2	44·6	49·9	87·9	36·0	W.	S.W.	10·0	
19	29·135	58·7	49·4	52·5	115·1	43·0	S.W.	S.W.	9·0	0·22
20	28·748	55·3	48·9	51·1	100·7	43·3	S.S.W.	S.S.W.	9·5	0·44
21	28·964	47·5	37·9	41·8	99·9	33·0	N.W.	N.	7·5	0·08
22	29·355	54·9	40·0	44·8	100·7	44·0	W.	W.	9·5	0·09
23	·307	58·3	45·3	51·6	102·7	44·6	W.	W.S.W	9·0	0·21
24	·181	55·7	47·1	50·0	105·5	41·3	S.W.	S.W.	8·0	0·24
25	·331	49·9	43·2	45·5	68·9	37·1	E.	S.E.	10·0	0·03
26	·296	52·5	40·1	44·7	87·8	39·0	S.S.E.	S.E.	9·5	0·02
27	·030	54·8	42·9	47·9	115·3	38·1	S.W.	W.	7·0	0·03
28	·227	54·8	30·2	42·6	130·0	26·2	N.	N.E.	10·0	
29	·419	60·0	33·3	47·0	125·0	28·5	N.E.	S.W.	4·0	0·16
30	·246	55·7	45·8	49·0	119·0	40·0	W.	W.	9·0	0·08
Means	29·341	55·1	41·0	46·8	100·7	36·2	...	...	8·3	2·79

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MAY, 1867.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·515	57·0	41·3	48·4	122·3	35·7	N.W.	N.W.	3·0	
2	·604	58·7	31·3	45·5	134·0	28·0	W.	S.W.	5·0	
3	·659	67·3	42·5	53·3	128·2	36·7	W.	S.W.	5·0	
4	·606	65·7	43·2	54·0	124·0	35·8	S.	S.	0·0	
5	·485	71·6	46·1	57·7	130·0	37·8	S.	S.	3·0	
6	·456	78·8	42·9	58·2	129·0	37·0	S.	S.E.	3·5	
7	·545	70·9	54·9	62·0	134·0	46·0	W.	S.	7·0	
8	·386	76·3	50·0	60·7	138·3	41·0	E.	S.	3·5	
9	·470	67·0	47·2	55·7	120·1	38·9	S.	S.W.	10·0	0·04
10	·326	64·8	49·7	55·5	101·4	42·0	S.	S.	10·0	0·47
11	29·100	65·8	51·1	56·5	130·0	45·0	W.	S.W.	8·0	
12	28·960	56·7	44·3	50·1	79·7	39·7	E.	E.	10·0	0·06
13	29·125	48·3	42·1	44·2	87·5	39·1	E.	E.	10·0	0·29
14	·308	50·4	40·4	43·9	87·9	36·1	E.	E.	9·5	
15	·421	48·7	38·0	42·1	83·6	36·4	E.	E.	10·0	
16	·594	50·1	38·2	43·0	112·0	36·9	E.N.E.	N.E.	10·0	
17	·651	53·7	35·3	44·3	113·2	30·1	S.	S.S.E.	9·0	
18	·539	61·1	30·7	46·7	123·0	26·4	S.S.E.	S.E.	3·5	
19	·343	63·8	43·3	53·2	90·3	36·1	E.	S.S.E.	10·0	0·06
20	·177	59·8	49·3	53·0	112·2	44·8	E.	S.	10·0	0·67
21	·233	47·9	44·1	44·7	98·0	44·0	N.E.	N.E.	10·0	0·03
22	·537	49·1	33·2	38·0	109·0	28·0	N.	N.E.	9·0	0·03
23	·634	48·1	29·8	38·7	110·8	24·5	N.E.	N.	5·5	
24	·693	48·9	25·5	37·7	118·0	22·4	E.	E.	9·0	
25	·529	52·1	30·9	41·4	96·0	26·0	S.E.	S.E.	10·0	0·43
26	·157	65·8	44·1	53·0	126·5	40·5	S.	S.	8·0	0·22
27	·105	60·1	48·6	53·5	108·9	40·2	S.S.W.	S.W.	7·0	0·02
28	·295	63·1	46·2	53·1	116·8	40·0	S.	S.W.	9·5	0·07
29	·345	69·8	49·8	58·2	131·1	42·2	S.W.	S.E.	6·0	
30	·545	67·1	49·1	56·7	131·1	40·9	S.	S.W.	9·5	
31	·666	65·7	45·1	54·6	127·9	37·2	S.W.	S.W.	7·5	
Means	29·420	60 5	42·2	50·2	114·7	36·6	...	...	7·5	Sum 2·39

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JUNE, 1867.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·650	66·2	47·9	56·3	122·3	41·3	S.	S.	10·0	
2	·498	75·7	50·7	61·2	142·2	42·2	S.	S.W.	6·0	0·35
3	·343	56·6	53·7	53·8	114·3	52·2	N.	N.	10·0	0·28
4	·514	61·8	46·1	53·1	130·8	40·0	N.W.	N.W.	9·0	0·24
5	·362	59·2	46·3	50·1	85·1	42·2	S.W.	N.W.	10·0	0·27
6	·249	60·0	49·7	53·4	104·8	44·0	W.	S.W.	10·0	0·09
7	·268	60·8	50·3	54·0	112·8	46·0	W.	W.	7·0	0·01
8	·631	61·8	39·5	49·9	127·6	35·1	N.W.	W.	10 0	
9	·734	65·8	47·8	55·2	134·0	42·1	N.	N.W.	3·5	
10	·827	74·0	45·3	58·4	134·3	40·0	N.W.	N.W.	0·0	
11	·790	77·8	46·5	62·1	134·7	42·8	S.	S.	0·5	
12	·629	71·2	55·1	60 8	135·2	47·0	W.	N.W.	7·5	0·20
13	·581	60·1	49·4	53·2	135·3	44 2	N.W.	W.	10·0	0·01
14	·415	59·7	45·6	52·2	128·0	40·1	N.W.	W.	8·5	0·01
15	·568	56·8	41·1	48·6	116·5	35·6	N.	N.	7·5	0·01
16	·665	59·2	46·0	51·4	121·1	45·0	N.	N.	9·5	
17	·698	59·7	44·8	50·1	115·8	38·1	N.	N.	10·0	
18	·657	67·9	38·2	53·1	127·8	34·6	N.	N.	7·5	
19	·551	63·0	55·1	58·2	81·0	52·0	N.	N.	10·0	0·17
20	·583	61·6	52·1	54·6	102·8	50·9	N.E.	N.E.	10·0	
21	·679	61 5	48·3	53·5	118·1	44·0	N.E.	N.E.	5·5	
22	·682	64·5	39·6	52·4	109·0	35·6	N.E.	N.E.	9·5	
23	·560	67·0	41·9	54·7	121·3	37·5	N.E.	N.	5·5	0·02
24	·577	65·8	49·2	55·6	123·3	42·3	N.	N.	9·0	
25	29·780	71·3	47·9	57·1	120·7	37·5	N.E.	N.	7·5	
26	30·080	68·8	47·4	56·4	118·8	43·2	N.	N.	0·5	
27	·111	77·8	39·7	58·8	122·6	32·3	N.	N.E.	2·0	
28	30·107	65·1	55·0	58·4	113·5	48·0	N.E.	E.	9·0	
29	29·931	71·8	36·4	53·2	126·5	31·5	N.	N.	2·5	
30	·560	75·8	43·6	58·0	134·5	37·5	S.E.	S.	4·0	
Means	29·643	65·6	46·7	54·9	120 5	41·5	...	...	7·0	Sum 1·66

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JULY, 1867.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.									in.
1	29·375	77°6	48°1	61°9	131°5	39°5	S.E.	S.	2·5	
2	·264	61·3	54·3	56·7	93·8	52·0	S.E.	N.W.	10·0	0·30
3	·552	68·3	54·8	59·3	117·5	50·5	N.W.	W.	9·5	0·02
4	·396	69·3	54·8	60·5	126·3	52·0	S.W.	W.	9·0	0·48
5	·631	64·8	53·0	57·2	121·5	47·0	N.	N.W.	7·5	0·09
6	·736	66·1	39·7	53·0	122·8	34·3	N.W.	W.	8·0	
7	·819	68·8	45·4	55·3	124·5	38·4	N.	N.E.	2·0	
8	·879	69·1	41·6	55·6	122·8	32 0	N.E.	E.	1·5	
9	·819	70·5	47·4	57·3	123·5	41·4	S.	S.W.	9·5	
10	·747	73·8	47·3	60·1	134·5	40·0	S.E.	N.E.	3·0	
11	·638	74·0	45·9	60·3	126·4	39·8	S.E.	S.E.	6·0	
12	·373	70·8	52·5	60·4	124·4	45·6	S.E.	S.E.	10·0	
13	·296	69·8	50·8	59·3	115·7	45·9	S.W.	N.W.	9·5	0·02
14	29·290	65·8	54·5	59·0	130·3	46·3	W.	W.	5·0	0·11
15	28·981	62·3	52·3	55·6	105·6	44·0	S.	S.W.	10·0	0·38
16	29·072	71·8	53·5	60·0	115·6	49·0	W.	N.W.	6·0	0·71
17	·290	73·2	51·8	58·4	119·8	43·6	W.	W.	3·5	0·17
18	·145	73·3	54·4	59·4	117·5	50·4	W.	W.	9·5	0·15
19	·257	62·8	50·0	55·7	105·5	43·3	N.W.	N.W.	9·5	0·09
20	·370	71·6	46·8	58·6	113·8	35·0	N.W.	W.	10·0	
21	·211	69·6	56·0	61·3	126·3	51·0	N.W.	W.	7·0	0·12
22	·224	68·5	53·5	60·2	119·3	46·0	W.	S.W.	8·0	0·11
23	·153	66·3	53·3	58·0	118·0	46·5	S.W.	W.	9·0	0·08
24	·253	64·3	45·1	54·2	123·0	37·0	W.	W.	4·0	0·25
25	·325	67·3	48·6	57·2	133·5	34·2	S.W.	S.E.	6·0	
26	·288	58·1	48·8	52·0	112·0	46·0	E.	N.E.	10·0	0·68
27	·583	60 3	42·8	50·9	123·5	36·6	N.	N.E.	7·0	0·18
28	·674	64·1	43·6	52·0	128·3	38·0	N.	N.	7·0	
29	·628	65·8	40·4	52·5	129·9	34·5	N.	N.	6·5	0·05
30	·591	66·1	39·2	52·6	130·5	34·0	N.	N.	3·5	
31	·533	68·3	39·6	57·2	125·0	36·7	E.	S.E.	2·5	
Means.	29·432	67·9	48·7	57·2	121·4	42·3	...	...	6·8	Sum 3·99

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AUGUST, 1867.

Days of Month	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·544	68·6	42·6	52·1	110·5	37·5	E.	E.	10·0	
2	·579	59·2	42·8	49·3	107·5	46·0	N.E.	E.	7.0	
3	·616	66·6	48·6	56·4	120·8	47·8	N.	N.W.	9.0	
4	·624	67·6	43·9	55·7	127·8	39·8	N.	N.W.	8·5	
5	·537	69·0	43·9	56·0	92·7	36·2	W.	W.	9·5	0·52
6	·310	65·3	54·3	57·3	119·0	51·1	S.W.	N.W.	7·5	0·43
7	·303	61·0	48·5	54·1	102·2	41·5	W.	S.W.	10·0	0·24
8	·283	68·6	53·4	59·2	122·5	47·3	W.	W.	6·0	
9	·403	68·8	53·8	60·1	129·0	46·2	W.	W.	2·0	
10	·669	65·6	45·1	55·6	139·0	38·0	W.	W.	7·5	
11	·706	74·1	43·6	58·0	140·0	39·6	S.	S.W.	2·5	
12	·621	80·8	45·3	63·7	143·3	40·5	S.E.	S.W.	2·0	
13	·545	83·1	55·2	69·2	135·2	45·7	S.E.	S.	0·5	0·10
14	·522	82·8	55 3	66·3	135·5	49·3	S.	N.E.	1·5	0·02
15	·258	66·0	53·3	59·6	111·4	48·8	S.W.	S.W.	9·5	0·56
16	·304	73·0	54·0	59·2	124·5	49·7	S.W.	S.W.	7·0	
17	·414	69·5	53·3	60·6	113·0	47·2	S.W.	S.W.	9·0	0·04
18	·595	71·9	58·3	63·5	134·2	53·0	W.	W.	8.5	
19	·567	75·8	58·5	66·0	131·0	54·1	S.E.	S.E.	4·0	0·10
20	·429	68·3	59·1	62·2	122·6	56·2	W.	W.	6·5	
21	·566	66·3	53·9	59·3	127·0	46·0	E.	N.W.	9·0	
22	·587	71·5	40·1	55·4	134·7	35·4	S.W.	S.W.	3·5	
23	·593	72·7	43·4	57·8	128·4	38·5	S.W.	S.W.	4·5	
24	·614	75·2	53·2	62·6	129·8	44·7	S.W.	N.W.	3·0	
25	·563	68·8	52·8	60·0	126·8	44·1	S.W.	S.W.	5·0	0·39
26	·530	65·4	54·9	58·2	120·0	50·5	N.W.	W.	9·5	0·06
27	·606	65·6	41·4	53·4	132·0	35·1	N.	N.W.	2·5	
28	·713	64·5	41·6	52·5	105·9	36·2	S.W.	N.W.	10 0	
29	·729	65·2	54·6	59·6	105·8	54·0	W.	N.W.	10·0	0·07
30	·599	68·0	52·9	59·3	110·2	44·2	S.W.	S.W.	9·0	
31	·411	73·8	55·2	63·5	135·8	45·1	E.	S.E.	8·5	
Means	29·527	69·8	50·2	58·9	123·2	44·8	...	...	6·5	2·53 inches

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SEPTEMBER, 1867.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Temperature. In the Shade. Lowest.	Temperature. In the Shade. Mean.	Temperature. Highst insun's rays.	Temperature. Lowst. on the grass.	Direction of the Wind. A.M.	Direction of the Wind. P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·426	72·7	57·5	64·1	120·5	48·8	S.W.	S.W.	6·5	
2	·638	74·9	45·0	60·5	131·0	39·1	E.	S.E.	7·0	0·93
3	·511	76·7	59·0	66·0	131·6	52·0	E.S.E	S.W.	9·0	
4	·376	68·5	59·8	62·6	126·0	53·1	S.W.	S.W.	6·5	0·03
5	·383	67·1	54·6	59·7	120·7	48·4	S.W.	W.	8·0	0·09
6	·300	65·8	53·9	57·8	118·4	46·2	W.	W.	8·0	0·08
7	·492	63·4	52·8	57·2	121·0	46·0	W.	W.	9·0	
8	·541	68·5	46·1	56·3	128·1	37·1	S.W.	WSW	3·5	0·02
9	·432	61·0	53·5	56·7	114·0	42·8	WSW	S.	9·5	0·46
10	·424	66·0	51·0	57·2	127·7	44·0	N.W.	N.W.	2·0	0·01
11	·465	64·8	44·3	54·2	98·9	38·1	S.E.	S.W.	10·0	0·21
12	·324	66·7	56·1	60·3	125·0	51·0	S.W.	S.SW	7·5	
13	·488	66·1	47·9	56·4	130·0	40·9	S.	N.W.	6·0	0·04
14	·528	66·8	48·1	56·0	115·7	39·0	S.W.	S.W.	9·0	0·31
15	·581	65·1	51·2	56·8	128·2	44·0	N.	N.	7·0	
16	·770	60·8	41·7	51·8	120·9	35·2	N.	N.NE	5·5	
17	·923	56·6	37·0	46·8	111·7	30·2	E.NE	E.	6·0	0·01
18	·894	61·2	47·1	53·9	117·4	39·8	E.	E.	5·0	
19	·711	64·5	52·2	57·0	115·0	44·2	E.	E.	7·0	
20	·731	60·7	48·6	53·5	109·9	42·8	N.E.	N.E.	8·5	
21	·698	62·8	42·3	51·7	117·2	36·0	N.E.	N.W.	5·5	0·02
22	·496	62·8	49·1	55·6	103·2	45·4	N.W.	NNW	8·5	0·03
23	·547	62·6	47·1	54·2	87·8	37·5	W.	N.W.	10·0	0·03
24	29·745	60·1	45·1	51·8	114·8	36·3	N.	N.	6·5	
25	30·025	59·7	33·4	46·6	128·2	28·5	N.N.W	N.	5·0	
26	30·001	58·7	32·4	46·0	123·1	29·2	E.	WNW	2·5	
27	29·901	57 2	39·0	48·7	92·4	31·8	W.	WNW	10·0	
28	·793	61·0	45·3	52·9	112·0	34·8	W.	N.W.	9·5	
29	·770	59·0	51·2	55·1	100·8	41·8	N.	N.W.	9·0	
30	·622	58·0	53·5	55·7	87·4	46·1	W.	N.W.	8·0	(·01
Means.	29·618	64·0	48·2	55·4	116 0	41·0	...	...	7·2	Sum 2·28

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OCTOBER, 1867.

Days of Month	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Higlst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·980	57·0	40·2	48·5	109·1	30·1	N.E.	N.W.	0·0	
2	·554	54·5	38·2	46·7	78·2	27·8	W.	W.	10.0	0·15
3	·481	49·5	33·3	42·5	102·6	25·0	N.	N.	2.0	0·07
4	·728	46·0	31·1	38·4	92·0	23·0	N.	N.	5·0	0·01
5	·636	50·2	33·1	40·8	99·9	25·0	N.	N.	4·0	0·06
6	·460	53·2	34·0	43·0	65·8	25·0	S.	N.	10·0	0·18
7	·207	54·9	41·2	48·9	95·2	38·2	N.	N.	6·0	
8	·156	52·0	35·0	43·2	100·3	26·8	N.	N.	5·0	0·07
9	·295	45·0	32·3	40·0	59·0	22·1	N.	W.	10·0	0·57
10	·441	51·2	41·9	45·5	92·7	37·8	N.	N.E.	7·5	
11	·832	52·6	28·1	40·3	68·6	20·4	N.	W.	9·5	0·55
12	·375	50·7	43·0	46·6	61·2	39·4	E.S.E	N.	10·0	0·04
13	·145	53·6	39·4	45·3	71·7	32·1	N.W.	N.E.	10·0	0·25
14	·244	59·4	45 3	52·5	99·0	41·6	S.W.	S.W.	7·0	0·01
15	·310	60·6	52·4	56·5	76·7	45·0	S.	S.	10·0	0·01
16	·435	58·1	43·9	50·8	105·7	34·0	S.W.	S.W.	4·5	0·23
17	·264	61·3	48·0	54·0	101·9	39·5	S.W.	W.	7·5	0·13
18	·294	56·9	45·1	50·2	98·8	38·7	W.	W.	5·5	0·30
19	·233	53·8	41·3	47·5	94·1	30·5	N.W.	N.W.	6·0	
20	·476	55·6	30·4	43·0	109·8	24·2	N.W.	S.E.	5·0	0·01
21	·620	57·8	34·3	47·5	66·1	26·7	S.W.	S.W.	10·0	0·15
22	·759	63·6	50·8	56·8	108·8	46·3	S.W.	S.W.	10·0	0·03
23	·549	61·8	54·0	57·2	107·2	47·2	S.S.E.	S.E.	10·0	
24	·409	56·8	43·0	50·0	107·2	40·0	S.E.	E.	9·5	
25	·705	55·5	47·2	51·0	95·8	42·1	E.	E.	10·0	0·11
26	·695	57·9	39·2	48·8	101·8	28·8	S.W.	S.W.	2·0	
27	·006	53·0	37·0	44·9	62·2	33·0	WS.W.	W.	9·5	0·32
28	·501	50·0	33·1	41·9	97·0	22·9	N.W.	N.W.	1·5	0·03
29	·393	59·8	38·2	50·6	72·1	27·2	W.	W.	10·0	0·05
30	·530	55·9	50·9	52·7	62·9	46·2	W.	W.	10·0	0·14
31	·481	56·3	51·1	55·0	81·7	45·8	W.	W.	10·0	0·01
Means	29·458	55 0	40·5	47·8	88·6	33·3	...	...	7·3	Sum 3·48

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NOVEMBER, 1867.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·478	58·4	40·0	48·3	90·0	37·0	W.	N.	6·5	0·06
2	29·973	48·9	32·0	43·6	84·0	23·1	N.	N.	0·0	
3	30·071	49·0	23·4	35·8	97·3	16·2	E.	N.W.	7·0	
4	29·874	52·8	40·0	45·9	89·0	39·0	N.W.	N.	10·0	
5	·868	46·1	40·1	42·9	87·2	34·0	E.	E.	1·5	
6	29·989	46·6	25·1	35·7	84·7	18·8	N.E.	E.	2·0	
7	30·107	48·7	24·5	35·8	92·8	18·1	E.S.E.	N.	0·0	
8	·146	50·8	25·4	38·0	88·0	18·2	S.E.	N.W.	7·0	
9	·140	50·9	29·3	41·8	85·9	20·9	WNW	N.	5·0	
10	30·053	50·7	40·4	45·6	80·5	30·4	E.S.E.	E.S.E.	9·5	0·02
11	29·855	48·6	27·4	37·1	89·7	19·5	E.	E.	0·0	
12	·724	43·4	29·2	36·9	54·1	19·8	E.	S.E.	4·0	
13	·522	45·8	35·0	40·9	58·2	30·2	E.	S.	10·0	0·06
14	·119	54·6	35·2	45·3	54·8	27·0	S.E.	S.	10·0	0·20
15	·150	58·4	42·7	50·8	84·1	40·2	S.E.	S.E.	10·0	
16	·238	47·0	40·0	43·4	51·8	40·0	E.	E.	9·5	
17	·470	41·6	36·7	38·8	56·0	30·3	E.	E.	9·5	
18	·847	40·5	29·6	34·7	51·3	21·9	E.	N.E.	9·5	
19	29·899	45·9	31·1	39·5	63·5	30·3	N.W.	N.	5·0	
20	30·008	40·9	32·3	36·6	61·1	21·4	N.	N.	5·0	
21	·079	41·6	30·5	36·6	60·0	21·5	N.	N.	10·0	
22	·102	42·4	30·2	36·3	82·1	22·8	N.N.W	N.	9·5	
23	·061	43·6	32·5	38·3	59·0	25·2	N.	N.	9·5	
24	·068	41·6	36·1	39·1	46·9	26·1	N.E.	N.	9·5	
25	30·039	41·7	23·5	34·0	42·2	15·0	N.	W.	10·0	0·02
26	29·764	45·8	33·6	40·6	76·2	30·6	W.	W.	9·5	
27	·814	41·0	28·0	34·0	75·6	18·5	S.W.	N.	0·0	0 ·05
28	·916	41·1	20·6	30·2	70·6	12·8	W.	W.	4·5	
29	·862	42·9	21·7	31·5	78·6	14·6	N.	W.	0·5	
30	29·435	44·0	35·0	37·7	54·9	30·1	S.	S.W.	10·0	1·07
Means	29·822	46·5	31·7	39·2	71·7	25·1	...	...	6·5	Sum 1·48

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DECEMBER, 1867.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	28·644	55·8	35·2	49·1	56·0	32·2	S.W.	S.W.	10·0	0·72
2	28·251	39·0	24·3	29 5	49·5	19·6	N.	N.	2·5	
3	·744	35·0	22·0	30·0	54·6	16·0	N.	N.	1·5	
4	·871	37·7	18·8	28·0	73·0	14·9	N.	N.W.	3·0	0·16
5	·427	41·3	28·0	35·7	69·2	23·0	N.W.	W.	5·5	
6	·406	36·6	30·0	34·0	37·9	23·1	N.E.	N.	10·0	
7	·731	35·1	24·8	30·8	50·0	19·2	N.	N.E.	4·5	
8	·615	36·0	28·1	32·3	40·9	22·1	N.	W.	10 0	0·22
9	·802	35·6	20·5	26·7	45·2	15·4	E.	E.	6·5	
10	·615	46·6	17·7	34·0	48·2	13·7	W.	N.W.	10·0	0·01
11	·644	51·0	33·4	44·5	69·3	29·2	N.	N.	9·5	
12	·734	51·3	42·9	47·3	62·7	35·2	N.W.	N.	4.5	
13	·799	45·8	34·0	40·6	61·0	25·1	N.W.	N.W.	7·0	
14	·572	48·8	36·5	44·0	50·3	29·0	W.	W.	10·0	0·01
15	·337	53·6	39·2	48·9	57·3	39·0	N.W.	N.W.	10·0	
16	·397	52·7	42·6	48·4	52·8	40·0	W.S.W	N.W.	10·0	0·02
17	·194	50·9	46·3	48·7	62·3	40·6	W.	W.	7·5	0·06
18	·077	40·0	31·2	35·7	68·0	24·4	N.W.	N.W.	1·0	
19	·340	38·6	28·2	33·3	69·5	19·0	N.	N.W.	4·5	
20	·506	36·0	24·1	29·3	44·2	16·2	N.	N.	10·0	0·23
21	·387	51·1	29·0	41·3	51·5	27·0	S.	W.	10·0	0·07
22	·443	52·6	38·7	47·1	72 0	35·5	N.W.	N.W.	7·5	
23	·709	46·6	27·8	37·9	72·2	20·0	W.	S.	6·0	0·08
24	·618	47·1	30 6	41·6	72·2	19·0	W.	S.W.	10·0	
25	·778	47·8	40·8	44·8	56·3	35·8	N.E.	N.E.	9·0	
26	·837	41·8	26·5	34·9	75·0	20·5	N.E.	N.E.	5·0	
27	·896	34·8	24·8	30·2	41·0	18·3	E.	E.	10·0	
28	·805	32·8	26·5	29·1	39 0	24·8	E.	E.	10·0	
29	·678	37·3	23·3	31·5	49·3	21·5	E.	E.	6·5	
30	·867	36·0	30·2	33·4	42·5	24·5	E.	E.	3·0	
31	·780	35·6	22·0	30·0	45·0	15·0	E.	E.	5·0	
Means	29·565	42·9	29·9	37·2	56·1	24·5	...	...	7·1	Sum 1·58

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JANUARY, 1868.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·705	30·8	22·7	27·4	67·2	18·0	E.	E.	9·5	
2	·768	31·6	23·3	27·4	64·4	18·0	E.	E.	4·5	
3	·745	29·8	19·8	24·0	57·0	11·0	E.	E.	5·0	
4	·539	32·6	21·1	27·5	46·5	16·5	N.E.	E.	10·0	
5	·547	35·2	25·0	30·3	40·4	23·0	S.E.	E.	10·0	
6	·443	34·6	28·9	32·5	38·3	25·8	E.N.E.	N.E.	10·0	
7	·590	35·3	22·8	28·5	42·0	17·3	S.E.	S.E.	10 0	0·20
8	·635	37·1	28·8	33·2	40·0	26·0	E.	E.N.E.	10·0	
9	·753	30·1	26·9	28·5	34·8	24·4	E.	S.E.	10·0	
10	·707	32·8	26·7	30·0	34·0	24·5	S.E.	S.	10·0	
11	·362	34·8	28·3	31·9	41·2	24·6	S.	S.	10·0	0.64
12	·447	46·3	30·7	39·2	53·4	27·7	S.W.	S.W.	9·0	0.32
13	·026	50·0	37·2	43·5	63·0	34·6	W.	N.W.	6·5	0·09
14	·237	52·1	39·6	45·4	52·1	32·5	S.W.	W.	10·0	0·07
15	·454	49·2	42·7	45·3	80·0	36·7	W.	N.W.	1·5	
16	·685	52·2	37·2	43·8	59·0	27·6	S.W.	S.W.	10·0	0·19
17	29·224	52·3	43·1	48·7	53·1	39·8	W.	W.	10·0	0·44
18	28·879	50·6	39·2	44·7	53·0	34 0	S.W.	S.W.	10·0	0·74
19	·597	47·5	38·0	42·6	52·1	33·0	N.W.	N.W.	7·5	0·64
20	28·644	41·2	35·2	38·0	47·2	27·2	E.	E.	9·5	
21	29·183	42 6	30·7	36·5	75·4	22·5	S.W.	W.	6·5	0·99
22	28·598	37·3	33·0	35·0	60·0	28·0	N.E.	E.	10·0	0·19
23	29·352	35·6	30·6	32·8	69·4	23·0	E.	E.	8·0	
24	·712	43·6	26·6	33·1	52 0	19·4	E.	S.W.	10·0	0·50
25	·184	45·5	35·0	40·3	61·8	32·0	W.	N.	8·0	
26	·715	43·2	33·6	37·7	75·3	26·8	N.W.	N.	2·0	
27	·746	47·2	30·5	38·8	55·5	20·0	W.	N.W.	10 0	0·23
28	·547	49·3	44·0	46·4	57·7	42·0	W.	W.	10 0	
29	·856	43·3	31·8	37·3	82·5	24·3	N.W.	N.	4·5	
30	·756	48·5	33·2	40·7	61·7	25·6	S.W.	W.	10·0	
31	29·467	52·0	43·0	46·8	66·0	41·0	W.	W.	10·0	0·10
Means.	29·423	41·7	31·9	36·7	56·0	26·7	...	...	8·5	Sum 5·34

FEBRUARY, 1868.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest	Temperature. In the Shade. Lowest	Temperature. In the Shade. Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	Direction of the Wind. P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	28·930	55·0	43·0	48·0	79·5	42·5	W.	N.W.	7·0	
2	29·465	49·0	37·7	41·8	69·5	30·5	N.W.	W.	6·0	0·49
3	4·95	43·4	38·0	40 0	82·9	31·0	N.W.	N.W.	3·5	
4	9·07	47·2	30·6	38·6	80·4	21·4	W.	N.	5·0	
5	8·39	48·6	35.2	42·0	63·3	30·0	W.	S.W.	10·0	
6	8·41	47·8	35·2	40·8	86·5	28·5	W.	N.W.	7·0	0·11
7	4·79	46·3	32·5	39·1	77·6	22·6	S.W.	S.W.	7·5	
8	29·400	41·8	34·7	36·6	72·0	29·4	N.W.	N.E	7·0	
9	30·076	45·6	23·7	33·6	81·8	15·0	N.E.	N.W.	5·0	
10	·668	47·6	36·1	41·5	76·8	32·0	N.W.	W.	9·5	0·26
11	·051	49·7	40·8	45·0	93·0	32·2	N.	W.	0·0	
12	30·040	44·0	30·2	36·6	90·5	21·3	N.	N.	5·0	
13	29·846	46·6	31·4	39·5	71·8	25·5	W.	N.W.	9·0	0·02
14	·686	46·4	41·2	43·2	61·7	36·8	W.	W.	10·0	0·01
15	29·664	45·6	32·5	40·1	63·9	27·0	W.	N.	9·0	
16	30·032	46·1	28·1	37·3	88·9	17·1	W.	W.	2·5	
17	29·833	48·8	32·6	39·6	93·9	27·0	W.	W.	4·0	0·03
18	·662	47·7	31·3	38·7	86·9	22·5	S.	W.	9·0	0·13
19	·153	44·8	38·0	41·0	50·6	36·0	W.	N.	10·0	0·09
20	·652	49·1	27·3	37·0	92·0	18·9	W.	W.	5·5	0·14
21	·511	50·6	36·4	44·4	90·1	34·0	N.W.	N.	2·5	
22	·326	47·6	42·0	44·2	89·9	34·0	W.	N.	8·5	0·02
23	·856	47·8	34·7	40·5	85·2	26·8	N.	N.	1·0	
24	·787	52·7	37·2	45·7	78·0	31·8	N.W.	W.	10·0	
25	·907	56·8	45·1	50·0	102·5	37·5	N.W.	N.W.	6·0	
26	·864	49·9	43·3	46·5	79·7	30·0	N.	N.	9·5	
27	·602	48·8	43·4	45·7	66·5	39·2	W.	W.	9·0	
28	·427	54·0	39·0	45·4	90·4	33·2	S.W.	S.W.	3·5	0·09
29	·047	50·5	41·9	45·2	51·2	37·8	S.W.	S.W.	10·0	0·82
Means.	29·671	48·3	36·0	41·6	79·2	29·4	...	...	6·6	Sum 2·21

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MARCH, 1868.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature.					Direction of the Wind.		Mean amt. of Cloud (0—10)	Rain.
		In the Shade.			Highst insun's rays.	Lowst. on the grass.	A.M.	P.M.		
		Highest.	Lowest.	Mean.						
	in.	°	°	°	°	°				in.
1	29·475	46·9	33·2	38·7	90·1	26·9	N.W.	N.W.	4·5	0·04
2	·632	50·5	40·0	45·2	83·6	39·0	N.	N.	8·0	0·05
3	·792	53·6	43·4	47·5	77·9	37·3	N.	N.W.	10·0	0·01
4	·703	55·8	43·9	48·7	93·1	39·0	N.W.	W.	9·5	0·15
5	·246	51·0	41·0	45·1	98·2	39·0	N.	N.	10·0	0·03
6	·338	48·1	36·2	41·5	97·4	29·0	N.W.	N.	4·0	
7	29·257	49·2	32·3	40·5	70·0	25·2	W.	W.	10·0	0·46
8	28·812	45·3	35·5	38·8	96·6	31·8	N.	N.	8·5	
9	29·133	46·6	31·4	37·8	85·9	22·0	W.	W.	10·0	0·11
10	28·982	51·0	35·3	41·7	88·0	29·7	S.	N.W.	4·5	0·09
11	28·810	48·8	34·2	42·3	54·2	23·2	S.W.	S.W.	10·0	0·35
12	29·216	51·7	36·7	43·4	99·9	30 0	S.W.	N.W.	2·5	0·02
13	·653	54·1	41·8	47·8	81·2	37·8	W.	S.W.	10·0	0·01
14	·750	55·3	45·1	45·8	100·5	40·8	W.	N.W.	9·0	
15	·764	52·2	29·2	40·3	103·1	19·3	W.	W.	7·0	
16	·571	51·7	37·9	44·7	59·2	33·2	S.W.	W.	10·0	0·07
17	·518	48·4	39·3	42·7	96·5	32·4	W.	W.	8·5	0·06
18	·800	49·6	32·4	40·2	104·9	21·4	N.	N.W.	2·0	
19	·414	45·5	31·6	38·5	76·1	22·8	S.W.	N.	7·5	0·07
20	·465	48·6	28·5	37·1	57·4	19·2	W.	W.	10·0	0·12
21	·610	54·1	43·0	48·0	87·9	42·0	N.W.	N.W.	9·5	
22	·521	49·9	44·1	46·5	62·0	39 9	W.	W.	10·0	0·03
23	·401	46·8	35·4	40·3	75·3	28·0	N.	N.	10·0	0·02
24	·526	41·1	29·3	34·7	84·0	20·0	N.	N.	8·5	
25	·669	51·2	22·5	34·2	91·4	14·1	N.W.	W.	5·0	0·15
26	·526	57·2	32·2	46·0	106·0	30 7	N.	N.	9·5	
27	29·723	56·0	41·7	47·9	106·9	34·0	N.	N.	4·0	
28	30·020	50·0	34·2	41·0	77·9	26·2	N.	E.	8·0	
29	·100	48·4	25·4	35·1	107·0	16·0	E.	E.	9·0	
30	30·009	55·0	24·6	40·4	102·8	16·6	E.	E.	0·0	
31	29·955	56·4	27·2	41·7	92 3	19·2	E.	E.	2·5	
Means	29·529	50·6	35·1	42·1	87·3	28·6	...	...	7·5	Sum 1·84

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APRIL, 1868.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·913	55·0	28·7	41·7	112·2	19·0	N.W.	N.	4·5	
2	·935	53·8	28·4	41·6	95·9	20 0	E.	E.S.E.	5·0	
3	·765	62·8	31·2	44·5	109·2	22·6	E.S.E.	S.	6·0	
4	·690	64·5	26·7	44·9	112·1	18·2	W S W	W.	0·0	
5	·598	59·7	29·6	44·6	111·1	21·2	W N W	N.W.	0·0	
6	·539	57·8	42·2	49·8	100·1	33·8	N.W.	N.W.	9·5	
7	29·285	59·3	46·2	50·6	108·2	37·8	S.W.	S.W.	7·5	0·01
8	28·978	52·6	36·0	41·3	106·1	32·2	E.	N.E.	10·0	0·03
9	29·408	46·2	31·3	37·2	90·6	25·7	N.	N.	9·5	
10	·582	48·8	28·3	38·0	116·9	16·3	N.E.	N.	5·0	
11	·593	46·8	30·2	38·3	103·8	19·7	N.	E.	7·5	
12	·560	45·4	22·3	33·0	103·9	12·0	E.	E.	7·0	
13	·579	52 0	19·4	35·7	107·3	9·9	E.	N.E.	0·0	
14	·763	51·0	36·3	41·2	92·1	32·8	E.	E.	10·0	
15	·899	61·8	25·7	44·4	109·9	16·1	N.E.	N.	0·0	0·03
16	·715	64·8	45·1	53·3	105·2	31·1	N.W.	N.	8·5	
17	·521	59·0	45·9	51·3	119·6	35·3	N.	W N W	10·0	
18	29·368	58·5	35·3	45·8	115·0	25·8	N.	S.E.	9·0	0·07
19	28·895	56 0	44·0	47·2	83·0	37·2	S.W.	S.W.	10·0	0·84
20	28·602	54·0	41·9	45·6	96·2	37·3	W.	W.	9·5	0·58
21	29·106	60·0	43·9	50·5	112·4	38·2	W.	S.W.	9·0	0·10
22	·243	55·9	46·5	50·6	92·2	41·1	S.S.W.	S.W.	10·0	0·44
23	·246	55 6	46·1	49·2	112·9	39·8	W.	W.	7·5	0·12
24	·054	52·3	43·2	47·1	77·4	35·1	S.S.E.	S.E.	10·0	0·19
25	·556	55·8	41·7	45·6	118·1	32·8	N.	N.W.	8·5	0·07
26	·699	60·1	37·1	46·7	125·1	28·6	N.E.	E.N.E.	4·5	
27	·646	65·8	34·4	44·8	112·9	26·1	S.W.	N.W.	10·0	0·10
28	·588	54·4	38·4	44·0	93·0	31·6	W.	S.W.	10·0	0·03
29	·706	58 8	43·3	50·2	114·0	41·7	S.W.	N.W.	0·5	
30	·669	60·7	46·9	52·7	116·0	36·8	N.W.	N.W.	5·5	
Means	29·490	56·3	36·5	45·0	105·7	28·5	...	...	6·8	Sum 2·61

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MAY, 1868.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·804	59·8	48·0	52·4	113·1	40·5	W.	N.W.	9·5	
2	·695	69·0	32·3	50·3	119·6	26·0	S.	S.	0·0	
3	·421	76·6	36·0	56·3	123·9	27·5	S.	W.	0·5	
4	·549	61·6	41·9	50·5	117·9	33·4	E.	E.	0·0	
5	·662	57·2	41·0	48·1	115·3	33·1	S.E.	S.E.	9·0	
6	·704	57·8	36·2	45·7	122·7	28·4	S.E.	S.E.	0·0	
7	·520	67·7	36·2	49·5	119·5	24·3	S.E.	S.E.	1·5	
8	·345	72·9	35·3	53·5	120·2	24·8	S.E.	S.W.	5·0	
9	·327	64·8	48·1	54·1	126·4	39·6	S.W.	W.	9·5	0·13
10	·329	63·3	51·2	55·4	117·7	42·9	S.	W.	8·5	
11	·373	59·3	42·2	50·6	111·2	31·1	S.	W.	9·5	0·09
12	·406	62·5	45·9	53·0	108·8	36·3	S.	S.W.	7·5	0·15
13	·695	61·5	40·3	50·4	132·2	31·7	W.	W.	7·5	
14	·860	66·4	50·8	57·1	136·1	43·5	W.	N.	8·0	
15	·756	70·8	37·4	53·2	130·9	31·0	W.	W.	5·5	
16	·616	64·6	52·0	56·9	129·7	41·8	N.	N.	10·0	
17	·653	69·1	47·1	56·8	138·3	38·1	E.	S.E.	9·0	
18	·633	77·1	47·1	60·6	137·7	36 8	S.S.E	S.	2·5	
19	·535	81·7	53·8	66·4	140·5	42·8	S.	S.	5·0	0·35
20	·515	62·9	54·3	57·0	130·3	50·5	W.	W.	8·5	
21	·466	62·2	46·5	53·6	123·2	37·2	W.	W.	7·0	0·13
22	·334	59·9	50·5	53·6	85·1	46·2	S.W.	S.W.	10·0	0·30
23	·072	59·6	51·1	53·2	110·6	47·2	S.W.	N.W.	9·0	0·19
24	·206	59·6	41·3	49·0	98·9	31·4	S.W.	S.	10·0	0·18
25	·296	64·6	49·0	55·0	123·3	44·0	W.	W.	6·5	
26	·545	63·8	47·3	55·1	131·8	39·1	S.W.	W.	6·0	
27	·676	66·6	46·7	55·4	135·8	41·9	W.S.W	W.	7·0	
28	·752	74·3	40·8	57·5	141·2	34·1	S.	S.	4·5	
29	·521	79·0	51·1	63·5	141·9	43·3	S.	W.	9·0	
30	·566	64·3	48·5	54·9	139·9	41·0	N.	N.N.E.	8·0	
31	·604	70·8	44·1	55·8	135·9	35·1	S.E.	S.	9·5	
Means.	29·530	66·2	45·0	54·3	124·5	36·9	...	...	6·5	Sum 1·52

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JUNE, 1868.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·504	73·9	42·0	57·0	144·5	34·1	S.S.E.	S.	1·5	
2	·505	64·6	49·4	55·6	139·0	40·2	N.W.	N.W.	9·0	
3	·638	64·0	34·4	49·4	138·2	27·0	N.	W.	4·5	
4	·547	62·1	46·2	53·0	109 0	36·0	W.	W S W	10·0	0·09
5	·720	66·8	41·3	52·5	132·0	31·1	E.N.E.	N.W.	7·0	
6	·738	69·7	40·4	54·8	126·0	31·1	W.	W.	7·5	
7	·745	64·7	51·1	56·9	129·9	41·9	N.	N.	4·0	
8	·781	61·9	35·8	47·7	127·5	24·1	N.	N.	7·0	
9	·727	64·8	41·2	51·8	126·1	31·8	N.	N.	9·5	
10	·730	64·5	36·0	50·4	135·7	26·1	N.	N.	8·0	
11	·772	68·0	37·4	51·8	130·2	27·1	N.	N.	9·5	
12	·811	72·8	48·0	59·1	131·1	38·9	N.	N.	6·5	
13	·776	73·8	47·5	58·8	133·8	36 9	N.W.	N.W.	5·5	
14	·751	73·3	46·2	58·8	126·9	35·1	N.	N.W.	1·0	
15	·782	69·1	50·0	57·4	127·2	38·5	N.W.	N.W.	5·0	
16	·816	72·7	48·3	59·1	123·9	38·1	N.	N.W.	8·5	
17	·735	76·4	47·0	59·3	130·7	35·5	N.	N.	4·5	
18	·778	76·6	52·2	62·8	129·0	42·4	S.E.	S.E.	0·0	
19	·697	74·3	49·3	60·4	126·0	40·2	S.E.	S.E.	0·0	
20	·587	76·6	54·2	64·5	136·1	47·0	S.S.E.	W.	6·5	
21	·439	75·6	56·0	64·6	126·9	46·5	S.W.	S.	4·5	0·33
22	·215	66·9	51·2	56·7	125·4	45·6	S.	W.	9·5	
23	·319	67·8	39·0	51·5	128·6	31·0	W.	S.	8·0	0·04
24	·572	67·8	45·4	56·0	118·8	35·2	W.	W.	9·5	
25	·718	70·8	54·0	60·0	133·5	49 0	W N W	N.W.	9·0	
26	·885	77·0	45·1	60·4	132·6	33·8	S.E.	N.E.	0·0	
27	·820	81·8	45·6	60·5	124·5	37·0	N.	N.	0·0	
28	·796	72·8	55 0	63·1	127·1	45·7	N.E.	N.	5·0	
29	·902	74·8	44·1	55·9	134·0	34·9	N.E.	N.E.	3·5	
30	·832	75·8	43·1	59·3	133·1	35·7	N.E.	E.	1·5	
Means	29·688	70·7	45·9	57·0	129·6	36·6	...	...	5·5	Sum 0·46

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JULY, 1868.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·824	71·0	53·0	59·4	126·5	48·0	E.	E.	5·0	
2	·712	74·5	55·5	61·6	133·0	46·3	N.E.	N.E	7·5	
3	·563	77·2	56·8	64·8	137·6	49·0	N.E.	N.E.	6·5	
4	·552	68·2	53·5	58·8	121·5	47·6	N.E.	N.E.	6·0	
5	·565	68·3	38·8	53·0	126·0	30·6	N.W.	N.W.	9·0	
6	·595	72·0	47·6	56·8	137·0	36·6	N.	N.E.	6·0	
7	·678	75·2	42·1	58·0	139·5	34·0	N.W.	W.	4·5	
8	·667	75·6	50·0	62·0	142·0	36·4	W.	N.	6·5	
9	·684	80·8	56·5	68·0	138·3	47·5	W.	N.E.	4·0	
10	·713	77·8	55·0	65·8	144·5	45·0	E.	S.E.	4·5	
11	·690	79·4	51·5	64·3	137·1	40·0	E.	E.	3·5	0·30
12	·614	70·8	56·6	60·5	122·0	49·2	E.	E.	7·5	0·36
13	·599	76·6	53·6	62·0	131·0	49·6	N.E.	E.	5·0	
14	·603	78·8	52·8	63·1	138·0	47·6	N.E.	E.	6·5	
15	·483	83·8	54·3	67·8	142·0	47·0	E.	S.W.	3·0	
16	·506	84·1	53·8	67·6	136·6	46·3	N.W.	W.	2·0	
17	·568	74·8	60·5	66·2	133·8	54·5	N.W.	N.	6·5	
18	·556	78·1	51·0	64·4	133·5	44·0	W.	N.W.	7·5	
19	·597	77·8	58·8	66·9	129·8	51·0	N.W.	N.E.	5·0	
20	·618	82·3	46·1	64·8	129·8	38·0	W.	N.W.	0·5	
21	·612	88·1	58·8	71·5	155·5	51·3	N.W.	S.W.	2·5	
22	·507	89·8	58·0	73·4	146·8	48·0	W.	E.	4·5	
23	·690	73·4	60·2	65·0	122·5	58·0	N.E.	N.E.	6·0	
24	·922	72·1	47·9	58·3	124·5	38·5	E.	E.	0·5	
25	·785	76·5	43·3	59·6	137·4	37·6	E.	N.E.	1·0	
26	·540	76·6	48·4	59·1	137·5	47·0	E.	S.	10·0	0·12
27	·429	83·6	48·1	65·1	136·0	48·0	N.	N.W.	2·5	
28	·256	81·1	52·5	66·0	127·3	44·8	S.W.	S.W.	1·5	0·20
29	·247	64·8	48·1	53·5	106·8	38·0	N.W.	N.W.	10·0	
30	·601	73·3	54·0	61·8	124·5	39·8	N.	N.	2·5	
31	·711	73·8	58·0	63·4	122·0	50·5	N.	N.	0·5	
Means.	29·603	76·8	52·4	63·0	132·9	44·8	...	...	4·8	Sum 0·98

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AUGUST, 1868.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature.					Direction of the Wind.		Mean amt. of Cloud (0—10)	Rain.
		In the Shade.			Highst insun's rays.	Lowst. on the grass.	A.M.	P.M.		
		Highest.	Lowest.	Mean.						
	in.	°	°	°	°	°				in.
1	29·847	80·8	40·3	59·6	142·5	32·5	E.	S.	2·0	
2	·679	83·4	45·6	65·0	139·6	37·0	S.E.	S.	0·0	
3	·551	84·0	58·4	70·3	143·0	51·5	S.E.	E.	4·5	
4	·562	84·4	60·2	71·5	144·0	53·0	S.E.	E.	3·5	
5	·396	86·3	51·5	67·9	140·0	42·5	W.	S.W.	2·5	0·18
6	·268	72·1	60·0	65·1	113·5	51·0	S.W.	S.W.	9·5	0·32
7	·246	73·8	62·0	66·2	124·2	57·7	W.	N.W.	3·5	
8	·552	70·5	53·0	60·5	119·0	46·0	N.W.	WNW	4·5	
9	·684	72·1	47·1	58·7	128·0	48·5	S.W.	N.	9·0	
10	·463	81·1	54·3	66·4	138·0	46·0	E.	S.E.	5·0	
11	·118	71·3	55·0	62·7	105·8	46·5	S.W.	S.W.	9·5	0·06
12	·246	71·3	51·0	60·3	123·3	42·8	W.	S.W.	7·5	0·09
13	·046	62·8	57·0	58·0	95·4	49·0	S.	N.W.	10·0	0·42
14	·262	68·0	50·9	56·9	125·8	41·4	S.	S.	7·0	0·72
15	·379	72·6	53·2	61·5	124·2	42·8	S.	S.	7·0	0·21
16	·374	70·1	53·2	60·1	100·8	44·2	S.E.	E.	10·0	0·01
17	·322	62·8	57·8	59·3	71·8	53·6	E.	N.E.	10·0	1·18
18	·160	66·0	55·3	59 0	90·1	51·0	W.	N.E.	10·0	0·62
19	·342	60·0	56·3	57·2	71·9	52·3	E.N.E	N.E.	10·0	0·02
20	·542	64·1	53·1	56·6	90·9	49·0	N.	N.E.	10·0	
21	29·530	66·8	50·2	57·0	119·8	43·1	W.	N.W.	7·0	0·63
22	28·767	60 0	51·9	54·3	106·2	46·0	W.	W.	10·0	0·21
23	29·179	60·1	50·3	53·6	112·0	43·1	N.W.	N.W.	9·0	0·01
24	·398	60·9	47·5	53·6	114·1	36·7	N.	N.	9·0	
25	·612	61·9	45·4	52·9	112·5	37·5	N.W.	N.W.	3·5	
26	·680	62·6	45·4	53·4	106·5	36 1	S.W.	W.	10·0	0·10
27	·559	63·6	55·2	58·3	118·0	51·0	N.W.	W.	3·0	
28	·749	60·9	46·1	52·9	115·9	35·9	N.	N.W.	6·5	
29	·819	64·6	47·1	54·6	106·1	38·0	N.W.	N.	10·0	
30	·733	68·8	51·8	59·6	114·0	43·2	W.	WNW	9·0	
31	·673	67·5	53·7	59·1	124 5	45·6	WNW	W.	10·0	
Means	29·443	69·5	52·3	59·7	115·5	45·0	...	...	7·2	Sum 4·78

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SEPTEMBER, 1868.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·754	68·0	50·0	58·0	115·6	39·5	N.	N.W.	5·5	
2	·824	75·9	46·9	60·5	127·0	40·5	N.	S.	0·0	
3	·691	77·9	50·2	62·8	131·7	43·1	S.	W.	7·0	
4	·669	79·1	48·6	64·0	131·1	41·8	W.	N.W.	0·0	
5	·764	82·2	47·8	64·5	135·5	42·9	W.	N.W.	0·0	
6	·704	82·8	49·2	66·4	128·5	41·3	S.	S.	0·0	
7	·599	85·5	49·4	67·4	131·8	42·0	S.E.	S.	2·0	
8	·719	64·1	55·2	59·2	96·6	46·8	E.	E.	10·0	
9	·871	69·8	50·9	59·2	121·9	43·2	S.E.	N.E.	2·0	
10	·739	71·7	42·9	57·5	133·3	36·0	S.E.	S.E.	0·0	
11	·559	71·8	41·2	56·5	135·0	34·6	S.E.	S.E.	1·0	
12	·525	67·0	49·0	57·2	129·1	37·2	S.E.	E.	5·0	
13	·520	60·8	43·8	52·2	119·5	35·0	E.	S.E.	0·5	
14	·475	59·8	43·2	51·2	125·5	33·2	S.E.	S.E.	4·5	
15	·509	59·8	47·4	52·8	111·9	41·4	S.E.	E.	9·5	
16	·466	66·6	41·2	53·0	124·0	32·7	S.E.	S.	7·0	
17	·232	64·7	50·9	56·8	120·3	41·0	S.	S.E.	10·0	0·11
18	·084	61·6	50·4	55·1	121·4	44·1	S.E.	S.	10·0	0·57
19	·046	63·7	46·9	53·1	105·5	38·2	S.E.	S.	9·5	0·65
20	·140	65·3	52·8	57·5	118·9	46·0	S.	S.	8·5	0·09
21	·267	67·2	48·6	56·2	130·5	42·9	E.	E.	6·5	
22	·279	63·1	51·8	56·2	121·8	44·0	E.NE	N.E.	7·5	0·07
23	·253	61·9	42·8	52·2	114·4	27·9	W.	W.	9·5	
24	29·244	61·9	38·8	50·4	123·0	30·9	S.	W.	5·5	0·02
25	28·917	62·4	42·2	51·9	72·8	36·2	S.E.	S.	10·0	0·50
26	29·189	64·7	48·4	55·9	109·4	39·9	S.	S.	7·0	0·81
27	28·906	59 8	50·0	53·7	102·6	42·0	S.W.	S.W.	7·0	0·64
28	·911	59·1	50·0	53·6	90·8	44·0	S.	S.	10·0	0·44
29	·807	62·0	52·1	55·6	106·0	46·5	S.W.	W.	6·5	1·03
30	28·767	59·0	46·1	51·7	98·5	42·2	S.W.	N.W.	9·5	0·12
Means.	29·381	67·3	47·6	56·7	117·8	39·9	...	...	5·7	Sum 5·05

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Days of Month	Mean Reading of Barometer corrected at 32°	Temperature in the Shade			Highest & Lowest Readings in the Sun		Direction of the Wind.		Mean amt. of Cloud (0—10)
		Dry-bulb	Wet-bulb	Mean			A.M.	P.M.	
	in.	°	°	°	°	°			
1	29·[illegible]	[illegible]	4·3	59·6	142·5	32·5	E.	S.	
2	·[illegible]9	58·4	45·6	65·0	139·6	37·0	S.E.	S.	
3	·[illegible]1	64·0	56·4	70·3	143·0	51·5	S.E.	E.	
4	·[illegible]2	64·4	60·2	71·5	144·0	53·0	S.E.	E.	
5	·[illegible]8	56·3	51·5	67·9	140·0	42·5	W.	S.W.	
6	·[illegible]6	72·1	60·0	65·1	113·5	51·0	S.W.	S.W	
7	·[illegible]6	73·5	62·0	66·2	124·2	57·7	W.	N.W	
8	·[illegible]2	70·5	53·0	60·5	119·0	46·0	N.W.	W.N	
9	·[illegible]4	72·1	47·1	56·7	128·0	48·5	S.W.	N.	
10	·[illegible]3	61·1	54·3	66·4	138·0	46·0	E.	S	
11	·[illegible]5	71·3	55·0	62·7	105·8	46·5	S.W.	S	
12	·246	71·3	51·0	60·3	123·3	42·8	W.	[illegible]	
13	·046	62·5	57·0	58·0	95·4	49·0	S.		
14	·262	68·0	50·9	56·9	125·8	41·4	S.		
15	·379	72·6	53·2	61·5	124·2	42·8	S.		
16	·374	70·1	53·2	60·1	100·8	44·2	S.E.		
17	·322	62·8	57·8	59·3	71·3	53·6	E.		
18	·160	66·0	55·3	59·0	90·1	51·0	W.		
19	·342	60·0	56·3	57·2	71·9	52·3	E.		
20	·542	64·1	53·1	56·6	90·9	49·0	N.		
21	29·590	66·8	50·2	57·0	119·8	43·1	W.		
22	29·767	60·0	51·9	54·3	106·2	46·0	[illegible]		
23	29·179	60·1	50·3	53·6	112·0	43·1			
24	·395	60·9	47·5	53·6	114·1	36·7			
25	·612	61·9	45·4	52·9	112·5	37·5			
26	·680	62·6	45·4	53·4	106·5	36·1			
27	·559	63·6	55·2	58·3	118·0	51·0			
28	·749	60·9	46·1	52·9	115·9	35·9			
29	·819	64·6	47·1	54·6	106·1	38·0			
30	·733	68·8	51·8	59·6	114·0	40·2			
31	·673	67·5	53·7	59·1	124·5	47·1			
Means	29·443	69·5	52·3	59·7	115·5	45·7			

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				·0	
				10·0	
				10·0	
				10·0	
				10·0	0·04
				4·0	
			..	10·0	
			E.	10·0	
			S.E.	10·0	0·01
			E.	7·0	
		E.	S.E.	5·0	0·05
		S.	S.S.W.	10·0	0·47
		S.W.	S.W.	10·0	0·32
		N.	W.	8·5	
	2	WNW	W.	2·0	0·02
	25	S.E.	S.	10·0	0·36
	36·6	S.	S.E.	9·5	
	35·1	E.	E.	10·0	0·02
	30·7	E.	E.	9·5	
7	21·4	E.	S.S.E.	10·0	
8	32·8	S.	S.	10·0	0·10
66·5	28·0	...	...	8·0	Sum 1·65

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OCTOBER, 1868.

Days of Month	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Higlst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·302	53·8	46·1	49·4	79·3	39·4	E.	E.	10·0	
2	·645	54·0	38·2	46·0	115·5	33·2	E.	E.	3·0	
3	·408	55·8	34·9	44·7	66·0	27·2	E.	N.W.	10·0	0·15
4	·359	54·1	34·2	44·6	112·0	28·0	N.W.	S.	6·0	0·10
5	·590	56·8	43·9	50·0	85·0	38·5	N.E.	S.	9·5	0·05
6	·522	58·3	45·0	51·2	79·0	35·0	S.	S.W.	10·0	0·54
7	·592	55·5	44·8	48·1	103·7	38·2	S.E.	W.	3·0	0·06
8	·724	57·3	33·2	46·2	100·7	27·7	W.	W.	5·5	
9	·522	57·7	46·1	51·4	110·9	41·0	S.W.	W.	9·5	
10	·600	58·8	41·9	49·8	121·5	33·2	S.E.	S.E.	9·5	
11	·672	59·8	32·5	46·6	116·8	26·3	W.	S.E.	1·0	0·01
12	·602	64·8	37·2	50·7	118·0	28·0	E.	S.	8·5	
13	·651	58·9	46·3	51·2	110·8	40·5	S.W.	N.	10·0	
14	·719	54·0	44·2	48·3	107·0	38·6	N.	N.	1·0	
15	·423	57·7	32·0	47·2	72·9	27·1	W.	W.	9·5	0·04
16	·212	58·4	43·3	49·2	99·5	32·5	W.	W.	9·5	0·08
17	·184	51·8	39·7	45·2	108·1	34·2	W.	N.	3·0	
18	·248	47·0	29·1	38·4	100·3	23·0	N.	N.	6·5	
19	·318	47·0	24·6	35·0	99·3	18·0	N.E.	N.W.	5·0	
20	·495	47·6	26·8	36·0	100·3	25·2	N.	N.W.	5·0	0·29
21	·313	50·1	36·0	43·1	104·8	29·4	N.W.	N.	1·0	0·03
22	·580	52·9	33·0	42·3	102·2	25·4	N.W.	N.W.	2·5	0·13
23	·346	52·6	38·1	45·5	103·8	29·0	N.	N.W.	5·0	0·09
24	·113	61·8	38·2	48·3	65·8	26·6	S.W.	N.W.	10·0	0·21
25	·312	57·3	44·1	50·8	63·7	35·9	W.	N.	10·0	0·34
26	·483	51·7	43·2	46·8	91·0	36·2	N.	N.W.	6·5	
27	·724	50·6	32·7	41·3	100·8	26·8	N.W.	N.	4·5	0 02
28	·894	52·8	29·3	40·6	80·9	23·6	W.	W.	9·5	0·60
29	·423	50·5	37·3	44·0	92·3	34·1	N.W.	N.	2·0	
30	·778	53·7	38·0	45·4	70·5	28·3	N.W.	W.	10·0	
31	·794	55·9	43·8	50·0	93·1	35·0	W.	W.	9·5	
Means	29·502	54·8	38·0	46·0	96·0	31·1	...	...	6·6	Sum 2·74

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NOVEMBER, 1868.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·731	56·1	49·9	52·5	74·9	44·8	W.S.W	S.W.	10·0	0·05
2	·725	52·9	47·3	49 4	80·5	42·0	N.	N.W.	9·0	
3	·465	53·0	37·2	46·4	65·9	28·5	W.	WNW	9·5	0·06
4	·255	52·4	47·3	49·4	56·9	42·2	W.	N.W.	10·0	0·11
5	·299	45·7	33·0	38·5	87·4	24·5	W.	N.N.W	1·5	
6	·392	39·7	25·4	32·5	87·8	17·9	N.	N.	0·0	0·04
7	·511	38·8	21·9	31·3	72·2	18·3	N.	N.	5·5	
8	·506	42·3	24·1	34·7	87·0	15·0	N.	N.	7·0	
9	·639	42·7	24·3	34·2	67·0	16·0	N.	N.	7·0	
10	·611	42·6	29·3	35·9	85·0	22·2	N.E.	E.	4·0	
11	·727	44·7	26·4	35·0	77·5	19·2	N.E.	N.E.	10·0	
12	29·995	43·9	30·4	38·3	54·9	30·4	E.	E.	10·0	
13	30·146	43·3	38·5	40·9	27·8	31·7	E.	E.	10·0	
14	29·828	43·2	31·3	38·3	51·0	24·5	E.	N.E.	10·0	0·04
15	·827	42·7	36·9	39·1	76·2	28·9	E.	E.	4·0	
16	·798	42·2	27·8	35·1	63·0	17·3	E.	E.	10·0	
17	·797	44·6	38·0	41·5	52·8	34·0	E.	E.	10·0	
18	·871	44·0	39·3	41·7	50·0	34·8	E.	S.E.	10·0	0·01
19	·887	42·8	38·1	40·2	62·0	34·3	E.	E.	7·0	
20	·747	40·0	21·4	31·2	79·5	21·4	N.E.	S.E.	5·0	0·05
21	29·282	49·0	26·3	38·8	59·5	20·4	S.	S.S.W.	10·0	0·47
22	28·668	53·0	38·3	47·9	54·8	35·0	S.W.	S.W.	10·0	0·32
23	28·867	48·7	41·2	44·0	85·9	32·2	N.	W.	8·5	
24	29·395	44·0	32·3	38·2	81·2	25·2	WNW	W.	2·0	0·02
25	·096	45·7	29·7	39·6	55·6	22·5	S.E.	S.	10·0	0·36
26	·311	45·0	40·1	42·4	60·0	36·6	S.	S.E.	9·5	
27	·532	42·9	40·1	41·4	53·0	35·1	E.	E.	10·0	0·02
28	·505	41·3	37·0	38·9	50·7	30·7	E.	E.	9·5	
29	·494	43·4	28·4	36·7	71·7	21·4	E.	S.S.E.	10·0	
30	·284	44·8	33·2	39·7	51·8	32·8	S.	S.	10·0	0·10
Means	29·540	45·2	33·8	39·8	66·5	28·0	...	...	8·0	Sum 1·65

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DECEMBER, 1868.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·271	45·8	39·4	43·4	49·0	35·1	S.	S.	10·0	0·14
2	·293	49·7	42·9	46·5	54·9	38·8	S.	S.	10·0	0·07
3	·066	53·1	44·1	49 0	76·4	38·5	S.	S.W.	7·0	0·02
4	29·043	55·5	46·0	51·0	56·0	37·5	S.W.	S.W.	10·0	0·13
5	28·959	57·6	49·3	53·5	57·6	42·0	S.W.	W.	9·5	0·08
6	29·095	57·5	48·1	53·2	57·5	40·1	S.W.	S.W.	10·0	0·39
7	·403	54·3	45·8	49·5	56·3	37·6	S.W.	S.W.	10·0	0·52
8	·012	52·8	47·4	49·7	62·8	40·5	S.W.	S.W.	9 0	0·24
9	·775	48·5	37·0	41·2	70·0	28·9	N.E.	E.	5·5	
10	29·416	53·8	37·3	47·0	56·2	30·1	S.	S.W.	10·0	0·07
11	28 791	54·8	45·1	50·2	60·9	37·0	S.W.	W.	7·5	0·11
12	29·441	42·8	33·5	38·1	49·8	24·1	E.	E.S.E.	8.0	
13	29·169	50·6	35·3	43·6	50·6	31·9	S.E.	S.E.	10·0	0·13
14	28·974	51·8	41·1	47·5	51·8	38·0	S.E.	S.E.	10·0	0·34
15	29·027	51·3	44·9	48·4	55·0	36·9	S.E.	S.E.	9·5	0·43
16	28·998	51·4	43·1	45·4	69·7	35·0	S.E.	W.	8·0	0·03
17	29·373	51·2	40·3	45·6	55·2	33·5	S.E.	S.E.	6·5	0·41
18	·167	52·7	41·6	47·9	67·9	35·3	S.E.	S.E.	6·5	0·12
19	·296	47·6	38·3	42·6	81·0	29·2	W.	W.	1·0	
20	29·138	48·8	33·1	40·0	53·0	24·7	E.N.E.	S.E.	10·0	0·27
21	28·897	55·8	40·0	49 0	65·0	34·1	S.E.	W.S.W	9·0	0·05
22	·832	50·8	44·3	46·4	75·7	36·3	S.W.	W.	3·0	0·27
23	·736	46·8	39·0	42·7	76·0	32·5	W.	W.	5·0	0·33
24	·291	49·5	36·6	43·3	52·5	26·5	S.W.	N.W.	8·5	0·08
25	28·875	43·8	34·0	41·0	74·8	25·8	W.	N.W.	5·5	0·04
26	29·103	48·0	35·9	41·0	51·5	28·0	N.W.	N.W.	8·0	0·35
27	28·542	54·8	38·2	48·0	54·8	32·0	N.W.	N.W.	8·5	0·27
28	·762	51·0	36·2	44·1	51·0	28·0	W.	W.	7·0	0·25
29	·737	48·0	32·1	40·4	78·0	26·5	S.	N.W.	9·0	0·45
30	28·982	39·3	31·7	36·2	52·3	22·5	S.W.	N.W.	7·0	0·12
31	29·412	43·8	32·2	38·3	75·0	23·5	W.	N.W.	3·5	
Means	29·061	50·4	39·8	45·3	61·2	32·6	...	...	7·8	5·71

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JANUARY, 1869.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature.					Direction of the Wind.		Mean amt. of Cloud (0—10)	Rain.
		In the Shade.			Highst insun's rays.	Lowst. on the grass.				
		Highest.	Lowest.	Mean.			A.M.	P.M.		
	in.	°	°	°	°	°				in.
1	29·593	47·8	23·3	33·3	69·5	16·6	S.W.	S.	6·0	0·21
2	·484	51·3	39·0	42·6	51·3	31·0	W.	S.W.	5·0	0·23
3	·133	49·7	38·2	42·5	77·9	31·0	W.	W.	5·5	0·08
4	·516	49·6	36·0	41·1	78·0	27·5	S.W.	W.	1·0	0·50
5	·189	55·6	37·2	47·2	61·5	30·5	S.W.	N.	7·0	0·14
6	·821	51·8	34·2	40·4	62·0	25·0	W.	W.	6·5	0·27
7	·871	50·6	33·2	43·3	53·0	25·3	N.	N.	10·0	0 01
8	29·978	52·5	41·9	48·0	62·3	29·5	W.	W.	9·5	
9	30·046	51·6	44·4	47·1	56·6	33·0	S.	S.W.	10·0	
10	29·798	44·8	40·4	41·7	71·0	29·6	S.	S.W.	6·0	
11	·698	44·1	37·5	41·0	52·3	34·0	S.	S.	10·0	
12	·665	44·8	39·7	42·0	54·5	36·0	S.	S.	10·0	
13	·523	43·3	37·2	40·0	54·0	33·0	S.E.	S.E.	7·5	
14	·310	47·3	35·2	40·6	59·7	33·0	S.E.	S.	10·0	0·15
15	·177	47·8	37·5	43·6	80·0	34·0	W.	N.W.	10·0	
16	·655	50·3	36·7	44·3	58·3	27·5	S.W.	S.W.	10·0	0·42
17	·662	53·8	40·6	47·7	88·5	38·0	S.W.	N.W.	8·5	0·02
18	·927	44·8	29·7	37·1	62·5	23·0	N.W.	S.W.	7·5	
19	·987	45·1	31·0	39·5	50·8	30·3	S.W.	S.	10·0	
20	·871	44·8	31·0	37·5	84·3	22·0	S.	S.	4·5	
21	·724	40·8	31·5	36·0	57·0	26·0	S.	S.	10·0	
22	·861	38·3	29·3	33·6	54·5	25·3	S.	S.	9·5	
23	·666	33·3	28·8	31·0	44·5	26·0	S.	S.	9·5	
24	·671	35·1	25·6	30·0	78·5	22·0	S.E.	S.	5·0	
25	·548	39·3	23·3	32·5	64·0	13·6	S.	S.W.	9·5	
26	·405	45·3	30·9	39·0	55·0	27·5	S.W.	S.W.	10·0	
27	29·200	47·6	35·2	39·3	62·0	25·8	S.	S.	10·0	0·03
28	28·901	52·6	40·0	46·8	93·0	36·0	S.W.	S.W.	7·5	0·76
29	28·622	49·3	42·9	46·5	83·0	36·0	S.W.	W.	8·5	0·33
30	29·096	53·8	38·2	44·7	83·3	31·0	S.W.	S.W.	7·5	0·37
31	28·813	54·3	40·9	49·0	65·5	34·8	W.	W.	7·5	0·25
Means	29·529	47·1	35·2	40 9	65·4	28·8	...	...	8·0	Sum 3·77

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FEBRUARY, 1869.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	28·448	53·0	48·1	49·5	61·0	41·0	S.W.	N.W.	10·0	0·20
2	29·235	49·8	39·7	43·5	91·0	33·0	N.W.	N.W.	5·0	0·12
3	·321	53·3	31·7	44·7	66·5	23·5	S.W.	N.W.	9·5	0·07
4	·702	54·1	48·1	51·1	77·0	43·0	S.W.	S.W.	7·0	
5	·757	58·1	45·9	51·4	90·0	37·0	S.W.	S.W.	5·0	0·01
6	·650	51·8	43·6	47·5	100·2	31·0	S.W.	S.W.	9·5	
7	·495	54·1	44·1	48·1	80·3	37·5	W.	S.W.	8·5	0·09
8	·156	55·8	47·9	50·8	61·5	42·0	W.	W.	10 0	0·07
9	·284	52·6	44·9	47·2	85·8	37·0	W.	N.W.	9·5	0·19
10	·482	52·0	42·4	47·3	89·9	36·8	W.	W.	9·5	0·04
11	·621	51·8	47·3	48·9	89·8	42·1	W.	S.W.	10·0	0·64
12	·191	46·8	36·0	39·9	60·1	33·5	E.	N.	10·0	0·36
13	·918	47·8	32·3	40·0	93·2	25·8	N.	W.	1·0	
14	·796	50·7	37·4	44·2	61·2	31·9	W.	W.	10·0	
15	·905	47·9	43·6	45·4	59·6	38·5	W.	W.	10·0	
16	·580	50·9	43·5	46·9	88·0	37·2	S.W.	S.W.	10·0	0·07
17	·284	49·7	45·1	47·0	60·0	40·8	S.W.	S.W.	10·0	0·11
18	·232	50·7	40·3	45·0	101·9	35·4	S.W.	W.	7·0	0·02
19	·523	48·6	29·0	38·6	103·1	20·2	N.	N.W.	5·0	
20	·457	45·0	28·5	36·8	62·5	18·7	N.	W.S.W	5·0	0·02
21	·526	47·8	32·2	40·0	106·0	26·2	E.	S.E.	9·5	
22	·567	38·3	32·2	35·3	52·6	26·8	E.	E.	10·0	
23	·770	41·9	27·7	34·3	90·1	19·4	N.E.	N.	5·0	
24	·697	48·8	28·1	39·2	65·1	19·0	W.	W.	10·0	0·23
25	·578	46·5	31·1	38·4	54·5	23·2	W.	S.W.	10 0	0·07
26	·720	51·7	36·3	44 0	108·6	32·9	W.	N.W.	7·0	0·02
27	·665	51·8	43·1	46·2	106·0	34·1	N.W.	N.W.	4·5	0·05
28	·445	42·9	33·1	37·4	89 8	26·3	N.W.	N.W.	6·0	0·14
Means	29·500	49·8	38·7	43·9	80·6	31·9	...	...	8·0	Sum 2·52

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MARCH, 1869.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·260	48·0	35·1	41·4	107·9	30·0	N.W.	N.W.	7·0	0·15
2	28·770	49·0	36·2	40·8	97·6	30·9	N.W.	N.W.	5·5	0·03
3	29·653	40·7	28·9	34·5	77·4	21·4	N.W.	N.W.	9·5	0·02
4	·714	45·6	32·3	38·1	71·0	27·0	W.	N.	10·0	0·02
5	·500	54·2	31·0	42·3	102·9	23·0	W.	W.	4·5	
6	·780	45·7	37·4	40·6	104·2	29·0	N.	E.	8·5	
7	·724	42·6	24·3	32·9	96·0	15·8	E.	S.	8·5	
8	·428	44·8	29·4	37·2	69·8	20·9	N.W.	N.W.	9·5	0·05
9	29·043	42·2	32·4	36·7	100·8	26·9	N.	E.	10·0	0·13
10	28·958	39·7	32·4	35·0	89·2	27·9	E.S.E.	E.	10·0	
11	29·011	41·9	26·4	33·0	91·0	21·0	N.	N.	7·0	
12	·213	40·9	29·0	34·3	105·0	22·3	N.E.	E.	9·0	
13	·128	39·7	27·1	33·0	104·0	26·8	S.E.	E.	5·0	
14	·295	39·7	28·4	33·3	85·7	23·1	E.	E.	4·0	
15	·393	37·6	28·4	32·7	57·0	23·1	E.	E.	10·0	
16	29·288	43·7	30·3	35·7	112·5	26·2	E.	E.	9·0	0·30
17	28·848	44·5	32·2	37·7	64·0	30·1	S.	S.	10·0	0·03
18	29·435	50·8	35·1	40·6	99·3	31·1	S.	W.	10·0	0·05
19	·058	50·7	34·1	42·1	72·9	27·2	S.	S.W.	9·5	0·48
20	·183	47·6	32·2	38·8	98·3	29·1	N.	N.	9·5	0·04
21	·370	45·1	34·2	38·7	73·4	27·0	E.NE	N.	10·0	0·04
22	·642	46·7	36·4	40·6	106·6	31·6	E.	E.	9·0	
23	·813	41·9	30·2	35·9	70·2	24·1	E.	E.	10·0	
24	·707	43·8	29·5	36·3	78·0	21·8	E.	E.	9·5	
25	·640	44·3	34·1	38·9	71·4	26·5	E.	E.	10·0	
26	·501	47·0	37·3	41·1	105·0	32·3	N.	N.	10·0	
27	·236	38·9	26·4	30·9	100·9	19·1	N.	E.	5·5	0·14
28	·085	39·8	29·3	33·1	78·9	22·7	E.	N.E.	10·0	0·03
29	·300	41·8	31·7	35·4	91·2	26·0	E.	E.	9·5	0·02
30	·455	41·7	32·4	36·6	56·9	25·8	E.	E.	10·0	
31	·411	44·6	33·1	37·5	77·9	27·5	N.E.	N.E.	10·0	
Means.	29·350	44·0	31·5	37·0	87·6	25·7	...	...	8·7	1·53

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APRIL, 1869.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Higlst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·466	48·5	30·6	38·7	108·9	22·8	E.	E.	6·0	
2	·299	49·0	31·8	39·3	99·6	25·0	S.W.	S.W.	9·5	0·14
3	·008	43·2	35·1	38·7	79·8	28·1	N.W.	W.	10·0	0·05
4	·266	47·9	32·4	39·0	104·2	27·1	N.	N.	7·0	
5	·658	51·0	30·9	41·1	93·9	24·0	W.	N.W.	8·5	0·04
6	·572	51·7	41·4	44·4	63·3	35·9	S.W.	S.W.	10·0	0·19
7	·519	58·9	43·7	49·8	114·2	40·0	S.W.	S.W.	10·0	
8	·509	61·5	46·7	52·0	120·0	39·2	W S W	S.	9·5	0·01
9	·647	49·8	43·1	45·4	79·4	35·2	E.	E.S.E	10·0	
10	·595	71·7	41·1	53·5	118·8	39·4	E.	S.	8·5	
11	·652	74·7	41·0	57·4	127·1	34·0	S.	S.	3·0	
12	·777	69·8	44·7	56·4	127·3	36·8	W.	W.	2·5	
13	·802	72·7	45·1	56·2	126·5	39·0	W S W	S.	0·5	
14	·464	77·4	41·1	58·9	130·0	36·1	S.	S.	1·0	0·38
15	29·285	60·9	47·2	51·0	122·0	44·2	N.W.	W S W	9·0	0·18
16	28·740	51·9	42·0	45·2	97·2	36·1	W.	N.W.	10·0	0·10
17	28·994	51·9	43·0	45·4	96·0	37·1	W N W	W N W	10·0	0·05
18	29·553	51·7	41·9	44·8	97·5	36·5	N.E.	E.	9·5	
19	·656	53·8	29·4	41·4	106·6	23·7	W S W	W S W	10·0	0·08
20	·399	58·4	43·0	48·2	119·5	38·8	W S W	W.	9·5	0·18
21	·570	59·0	44·1	49·9	123·9	37·1	N.	N.W.	9·0	
22	·581	62·8	36·0	48·4	125·2	28·3	S.	S.	7·5	
23	·638	56·1	45·2	50·0	103·7	39·6	S.	S.	10·0	0·19
24	·643	59·9	39·9	48·8	121·5	32·9	N.	S.W.	3·0	
25	·799	64·9	45·5	53·7	131·9	36·5	N.	N.	7·5	
26	·796	64·3	41·9	52·5	126·8	31·2	S.E.	S.E.	0·0	
27	·709	70·2	43·6	55·8	122·2	37·4	E.	E.	0·5	
28	·760	71·9	45·0	56·5	122·1	36·8	E.	E.	3·0	
29	·819	57·9	38·8	46·1	118·7	32·0	N.E.	E.	0·0	
30	·700	62·1	33·9	46·9	127·2	26·0	E.	N.E.	0·0	
Means	29·529	59·5	40·3	48·5	111·8	33·9	...	...	6·5	Sum 1·54

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MAY, 1869.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·693	55·0	37·3	44·0	134·1	28·6	E.	N.W.	5·5	
2	·559	64·3	30·0	47·0	137·2	22·5	E.	S.W	4·5	
3	·443	56·0	44·1	48·4	92·9	37·9	S.	S.W.	10·0	0·83
4	·384	48·4	43·1	43·5	79 9	41·2	E.S.E.	E.S.E.	10·0	0·31
5	29·405	60·6	38·8	47·5	114·8	36·1	E.S.E.	E.S.E.	9·5	0·25
6	28·774	60·9	46·2	51·1	115·9	41·6	S.E.	S.	10·0	0·09
7	·716	62·2	50·0	54·1	123·0	44·5	S.W.	S.	9·5	0·14
8	28·799	55·0	49·5	50·8	123·0	38·9	E.	S.W.	10·0	0·32
9	29·246	55·7	41·1	45·6	84·0	38·6	E.	S.E.	10·0	0·31
10	·049	63·9	44·3	53·3	130·8	45·3	W.	W.	7·5	0·05
11	·362	57·7	45·1	49·0	131·9	42·8	N.	N.	7·5	
12	·633	57·1	35·1	46·0	134·9	27·1	N.E.	W.	4·0	
13	·759	59·5	37·5	47·5	128·0	27·4	E.	E.	7·5	
14	·613	56·0	41·1	47·2	110·0	34·1	E.	E.	9·5	
15	·389	58·8	41·9	49·8	125·5	35·8	N.E.	S.E.	8·5	
16	·290	55·0	41·3	46·7	112·0	40·0	E.	E.	10·0	0·01
17	·147	60·1	45·8	49·5	107·5	43·1	S.	S.W.	10·0	0·29
18	29·028	56·8	45·7	48·7	122·3	37·1	S.W.	S.	10·0	1·15
19	28·991	53·2	41·5	44·2	124·7	38·9	W.	W.	10·0	0·11
20	29·269	53·9	36·7	44·6	127·7	29·1	N.W.	N.W.	7·5	0·06
21	·316	55 0	32·0	43·6	110·0	27·0	N.	N.	8·0	0·03
22	·552	58·2	45·2	50·5	121·9	41·2	N.	W.	10·0	
23	·631	59·2	40·0	49·5	136·2	30·5	N.N.W	N.W.	9·0	
24	·464	59·7	38·2	48·2	130·0	32·7	S.	S.	10·0	
25	·261	65·0	47·9	56·0	134·0	41·5	E.N.E	S.	9·5	0·26
26	·085	63·8	50·0	54·6	134·8	45·4	S.	S.	9·5	
27	·286	53·6	47·3	48·5	94·0	41·8	E.	E.	10·0	0·40
28	·466	46·1	42·0	43·0	64·0	39·0	E.	E.	10·0	0·22
29	·677	51·1	39·1	43·3	98·1	31·9	E.	E.	10·0	
30	·705	58·3	29·1	43·6	141·2	20·1	N.	N.	9·5	
31	·673	58·9	42·3	49·3	134·4	35·8	N.	N.	9·5	0·20
Means.	29·344	57·4	41·6	48·0	118·0	36·0	...	...	8·9	Sum 4·03

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JUNE, 1869.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst Lowst. insun's rays	on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29 802	61·7	33·3	46·8	137·2	28·1	S.	N.	4·0	
2	·740	64·0	47·2	53·8	134·4	40·0	W.	W S W	9·5	0·15
3	·582	63·2	50·4	55·1	133·7	47·2	N.W	N.W.	7·5	
4	·491	60·0	42·0	48·5	103·1	34·0	W.	N.W.	10·0	
5	·655	68·0	47·9	57·0	132·0	40·1	W.	S.	7·0	
6	·804	78·6	40·1	58·3	142·1	34·1	S.W.	S.	2·0	
7	·729	81·2	52·2	66·3	141·0	43·0	S.W.	W.	4·0	
8	·756	67·8	50·1	58·0	134·5	43·8	N.	N.	5·0	
9	·702	68·0	41·1	53·6	135·8	35·9	W.	N.	0·5	
10	·702	60·2	44·1	51·0	132·9	38·2	N.E.	N.	5·0	
11	·650	63·9	36·2	49·2	129 9	31·2	E.	W.	4·0	
12	·401	65·3	46·1	53·5	122·0	35·2	W.	S.	10·0	
13	·105	65·7	41·6	52·0	125·2	36 8	W.	S.	7·5	0·34
14	·104	59·2	45·0	49·5	119·9	44·1	N.	N.W.	6·5	0·10
15	·204	57·7	44·4	50·0	116·0	38·0	W.	W.	2·5	0·08
16	·679	60·8	43·1	50·3	120·2	35·1	N.W.	N.N.W	7·0	0·05
17	·810	56·2	39·0	46·0	98·2	30·6	N.W.	W.	10·0	0·21
18	·606	56·7	45·0	48·2	105·3	40 9	N.	N.	10·0	0·13
19	·520	61·7	44·4	52·1	123·9	38·0	E.	N.	9·5	0·14
20	·586	55·6	45·1	49·1	101·9	40·5	E.	N.E.	9·5	
21	·582	55·6	42·0	47·8	80·3	34·1	N.	N.	10·0	0·08
22	·722	63·6	47·2	53·3	118·0	42·1	N.	N.	10·0	
23	·783	61·6	47·4	53·5	113·0	36·5	N.E.	N.E.	8·5	
24	·710	66·6	38·4	51·4	129·0	33·3	N.E.	N.E.	10·0	
25	·696	69·3	38·2	53·7	134·2	33 3	N.E.	N.E.	6·5	
26	·676	70·1	44·6	56·2	132·0	40·0	N.E.	E.	5·0	
27	·766	73·3	40·8	57·2	137·0	36·5	S.E.	S.	2·0	
28	·834	65·3	49·4	55·2	128·3	43·4	E.	E.	10·0	
29	·780	64·3	40·9	52·9	127·5	35·0	N.E.	E.	2·5	
30	·788	60·1	45·4	51·5	112·5	38·5	N.E.	N.E.	10·0	
Means	29·632	64·2	43·8	52·7	123·4	37·6	...	...	6·8	Sum 1·23

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JULY, 1869.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·759	62·3	50·0	54·5	131·0	46·3	N.E.	N.E.	9·5	
2	·730	61·1	49·1	53.5	114·5	45·2	N.E.	N.E.	9·5	
3	·714	71·3	49·4	57·5	136·0	45·6	N.E.	S.E.	5·5	
4	·635	72·8	43·1	55·7	133·0	36·0	S.	S.	7·5	
5	·453	73·6	52·7	61·2	125·0	41·0	S.W.	S.W.	7·5	
6	·481	69·1	56·2	61·2	124·5	40·5	W.	W.	9·5	0·02
7	·649	67·3	55·5	60·1	109·5	45·7	S.W.	S.	10·0	
8	·556	69·3	57·8	61·5	124·0	52·0	S.W.	W.	10·0	0·02
9	·799	67·6	48·1	57·0	132·0	40·0	N.W.	N.W.	5·5	
10	·945	72·8	41·4	56·5	141·5	34·5	N.	N.	2·0	
11	·875	79·8	41·4	61·3	139·0	34·0	S.	S.	0·0	
12	·636	84·8	46·6	65·9	146·8	36·5	S.E.	S.W.	2·5	0·08
13	·741	67·8	51·8	58·0	138·0	48·7	N.E.	N.	4·5	
14	·834	72·3	40·9	56·3	140·0	34·5	N.W.	N.W.	3·0	
15	·809	78·6	51·5	64·7	143·5	43·0	N.W.	N.	3·0	
16	·754	81·3	52·5	66·2	148·5	44·5	N.	N.	7·0	
17	·637	85·3	52·5	68·9	151·0	45·2	W.	S.	2·0	
18	·559	85·3	57·5	71·1	152·0	50·0	W.	W.	0·5	
19	·627	72·8	52·5	62·8	142·0	44·5	N.E.	E.	6·5	
20	·700	72·3	52·3	59·6	145·0	47·5	E.	E.	5·5	
21	·591	79·3	50·0	62·1	152·0	41·8	S.	S.	4·5	
22	·473	87·8	50·7	66·5	148·0	44·0	S.	N.W.	2·5	
23	·627	72·8	55·5	63·1	146·5	47·5	N.W.	W.	7·0	
24	·556	72·8	45·1	58·2	150·0	37·5	N.	N.W.	6·5	
25	·452	72·8	49·6	58·6	138·5	41·0	N.	W.	6·0	0·04
26	·327	71·8	52·8	60·1	138·0	41·5	S.W.	S.W.	9·5	0·07
27	·437	69 1	50·0	58·4	136·5	40·7	W.	W.	6·5	
28	·498	62·1	44·6	53·2	111·3	36·3	S.	S.	9·5	0·28
29	·512	69·8	40·1	55·0	131·5	35·0	S.W.	S.W.	3·5	0·18
30	·580	68·8	57·5	62·0	108·0	53·0	W.	S.W.	9·0	0·02
31	·550	68·8	59·5	62·3	116·5	55·0	S.W.	S.W.	10·0	0·04
Means.	29·629	73·0	50·3	60·4	135·3	43·0	...	...	6·0	Sum 0·75

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AUGUST, 1869.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature.					Direction of the Wind.		Mean amt. of Cloud (0—10)	Rain.
		In the Shade.			Highst insun's rays.	Lowst. on the grass.	A.M.	P.M.		
		Highest.	Lowest.	Mean.						
	in.	°	°	°	°	°				in.
1	29·389	66·3	50·0	56·7	139·5	41·5	W.	S.W.	6·5	0·04
2	·401	64·3	48·1	55·0	133·5	40·0	N.W.	N.W.	7·0	0·41
3	·368	66·6	47·1	55·3	104·9	38·0	S.	S.W.	10·0	0·36
4	·507	70·3	54·0	61·1	125·0	48·0	E.	N.	9·5	
5	·752	72·1	52·2	58·6	127·0	45·0	N.	N.	7·0	0·05
6	·847	68·1	46·1	55·7	136·6	38·8	N.	E.	7·0	0·09
7	·775	66·8	46·6	56·2	114·0	40·7	S.W.	W.	5·5	0·17
8	·426	65·6	53·0	58·0	99·6	52·5	S.W.	N.W.	10·0	0·02
9	·193	70 0	57·5	61·2	121·5	53·2	N.W.	W.	10·0	0·01
10	·347	62·7	47·1	53·5	118·5	39·6	N.W.	N.W.	5·5	0·05
11	·488	62·5	46·1	53·0	125·1	39·1	N.W.	N.W.	7·5	
12	·624	64·0	38·7	51·1	131·5	32·7	N.W.	W.	4·0	0·32
13	·439	68·2	50·0	58·3	120·6	39·0	W.	N.W.	9·5	0·03
14	·666	67·6	48·1	57·3	126·5	42·5	N.W.	N.W.	8·5	
15	·874	68·7	42·9	54·9	138·4	37·6	N.W.	W.	5·0	
16	·877	68·5	47·3	57·4	119·7	40·6	W.	N.W.	7·5	
17	·912	66·0	48·3	56·4	127·0	41·5	N.	E.	5·0	
18	·906	70·0	39·3	54·3	130·0	31·4	S.W.	N.W.	4·0	
19	·870	64·8	50·0	56·3	134·2	40·1	E.	E.	5·0	
20	·878	65·9	47·1	56·0	132·6	36·1	N.	E.	9·5	
21	·841	72·0	43·0	57·2	132·7	34·0	E.	N.	0·0	
22	·852	74·6	50·0	61·6	142·6	40·0	N.E.	N.E.	5·0	
23	·815	75·0	51·1	60·8	136·0	39·1	S.E.	W.	5·0	
24	·769	78·6	44·9	61·2	142·0	35·0	W.	N.W.	2·0	
25	·782	83·8	46·5	65·0	149·5	37·9	W.	E.S.E	0·0	
26	·795	85·0	50 0	67·2	149·9	41 2	E.	S.E.	0·0	
27	·822	85·7	55·1	69·7	150·0	45·5	E.	E.	0·0	
28	·665	86·1	57·0	69·0	152·0	45·0	S.E.	S.E.	0·0	
29	·580	61·2	45·4	53·3	87·3	36·8	N.E.	N.E.	10·0	
30	·790	61·0	49·6	54·0	113·8	45·1	E.	E.	9·5	
31	·893	63·7	32·4	48·4	134 7	22·4	N.E.	E.	0·0	
Means	29·682	69·9	47·9	57·9	128·9	40·0	...	...	5·6	Sum 1·55

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SEPTEMBER, 1869.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·953	62·7	31·9	48·8	130·5	23·5	E.	E.	1·0	
2	·914	63·0	33·3	49·4	140·0	24·2	E.	E.	4·0	
3	·713	64·8	41·8	53·1	122·0	33·1	E.N.E.	S.	9·5	
4	·402	73·2	36·2	55·0	138·8	25·1	E.S.E	S.E.	4·5	
5	·306	67·9	50·8	59·2	100·8	43·8	S.	S.	9·5	0·63
6	·285	64·8	56·8	59·8	121·5	50·1	S.W.	W.	9·5	0·08
7	·417	71·0	56·9	62·1	131·0	51·9	N.W.	W.	6·5	
8	·329	68·6	58·2	62·5	108·9	52·2	W.	W.S.W	9·5	0·06
9	29·334	69·1	54·0	60·1	118·9	43·2	W.	W.S.W	8·5	0·31
10	28·883	66·6	56·1	58·4	109·3	49·2	S.	S.	10·0	0·25
11	29·057	64·0	49·5	55·5	112·0	39·8	W.	W.	8·5	0·56
12	28·895	59·0	49·0	52·5	112·0	45·0	N.	W.	8·5	0·08
13	28·934	59·2	49·2	52·4	99·9	41·4	W.	N.W.	10·0	0·22
14	29·355	65·9	50·2	56·8	94·9	40·8	S.W.	W.	10·0	0·49
15	·140	63·0	52·0	56·2	108·1	43·2	W.	W.	6·0	0·06
16	·264	62·7	52·1	56·5	112·5	44·0	N.W.	W.	7·0	0·30
17	·320	64·7	51·8	57·9	79·9	46·6	W.	W.	10·0	0·03
18	·087	64·7	56·5	59·1	91·3	50 2	W.	W.	10·0	0·66
19	·008	59·0	51·0	53·3	113·2	44·1	W.	N.	5·0	0·10
20	·078	56·8	44·3	50·0	108·9	35·1	W.S.W	N.	9·5	
21	·381	60 3	40·1	50·1	120·2	28·2	W.	N.	5·0	
22	·732	61·9	44·3	52·1	120·1	36 0	N.W.	N.W.	3·5	
23	·758	63·0	51·4	56·4	100·2	44·8	W.S.W	W.	9·5	
24	·680	66·9	56·1	60·5	113·5	52·0	W.	N.	9·5	0·02
25	·453	69·4	49·3	57·5	114·0	39·0	S.W.	W.S.W	2·5	
26	·478	61·7	52·1	56·0	119·0	44·8	W.	N.	5·0	
27	·499	60·3	42·9	51·5	92·0	30·9	W.S.W	W.	10·0	0·13
28	·295	62·5	39·3	50·7	109·0	30·5	W.S.W	S.W.	7·0	0·32
29	·080	70·8	53·0	60·8	117·2	43·9	S.	S.	10·0	0·54
30	·182	65·4	56·0	59·0	86·7	50·5	S.E.	W S W	10·0	0·88
Means.	29·340	64·4	48·9	55·8	101·5	40·9	...	...	7·6	5·72

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OCTOBER, 1869.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·305	63·3	51·9	56·2	101·6	44·1	S.	S.	9·0	0·63
2	·226	61·2	52·0	55.9	99·8	45·0	S.	S.W.	9·0	0·28
3	·457	62·3	48·6	54·7	105·5	41·2	N.	N.W.	10·0	
4	·724	60·6	46·0	52·5	115·8	37·5	WNW	W.	9·5	
5	·710	63·2	42·1	53·0	116·7	33·9	N.E.	S.	9·0	0·01
6	·741	61·2	44·2	53·0	112·5	35·0	E.	S.	7·5	
7	·717	64·8	47·3	55·6	108·0	36·9	S.	S.	4·0	
8	·680	73·0	47·2	60·8	119·8	39·8	WNW	W.	5·0	0·01
9	·732	72·1	46·1	59·0	111·4	40·2	N.	S.	0·0	
10	·720	72·4	52·1	61·6	116·1	39·8	S.	S.	9·0	
11	·714	72·0	54·5	62·0	110·0	44·1	S.	S.	1·0	
12	·731	65·3	51·0	57·0	116·0	45·4	S.	W.	9·0	0·13
13	·618	60·7	52·6	56·0	104·0	50·2	W.	N.W.	9·5	
14	·721	52·8	37·9	45·7	102·3	28·2	W.	W.	8·5	0·04
15	29·353	56·2	44·5	50·4	95·6	38·5	W.	W.	10·0	0·08
16	28·898	56·9	43·0	49·8	82·1	40·0	S.W.	W.	8·5	0·15
17	29·366	45·8	34·2	39·3	99·3	26·2	N.	N.	4·5	0·14
18	28·977	49·9	34·1	42·9	80·8	23·5	S.W.	W.	8·5	0·24
19	29·212	43·0	36·1	38·8	76·0	24·8	N.	N.	10·0	
20	·761	50·0	27·4	37·7	91·9	17·9	N.	W.	1·0	
21	29·796	53·2	32·5	44·6	76·2	27·1	N.	N.	9·0	
22	30·032	50·5	36·1	43·3	64·8	25·2	N.	N.W.	10·0	
23	29·877	53·7	42·0	47·5	79·1	38·1	W.	W.	10·0	
24	·764	53·8	46·8	49·7	98·5	40·9	N.	N.	9·5	
25	·781	50·8	29·6	40·3	88·0	20·0	N.	W.	10·0	
26	·516	46·8	39·0	41·7	89·0	30·0	N.	N.	1·0	0·09
27	·886	37·9	29·3	33·3	78·0	21·2	N.W.	N.	4·5	
28	·418	41·8	26·3	33·6	76·2	18·6	N.	N.	0·5	
29	·779	47·6	30·2	38·0	77·0	24·1	N.	N.	4·0	0·19
30	·525	50·6	34·0	42·5	82·2	25·6	N.	N.E.	9·0	0·02
31	·800	52·4	28·4	41·3	62·2	19·0	E.	W.	8·0	
Means.	29·582	56·3	40·9	48·3	94·7	33·3	...	...	7·0	Sum 2·01

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NOVEMBER, 1869.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·865	56·6	39·3	47·6	97·5	29·0	W.	W.	9·0	
2	·796	54·3	42·4	48·7	96·0	33·0	W.	N.W.	9·0	0·03
3	·469	50·4	47·1	48·5	75·0	38·5	N.	N.W.	5·0	0·04
4	·135	54·6	45·3	49·0	82·8	39·2	W.	W.	9·0	0·02
5	·254	53·9	38·4	45·6	75·2	30·1	W.	W.	10·0	0·20
6	·187	48·6	41·3	44·4	83·2	31·0	W.	N.	0·5	
7	·518	48·0	28·3	37·2	74·2	20·9	N.	W.	5·0	0·01
8	·329	55·3	39·9	47·8	80·8	27·0	W.	N.	8·0	0·01
9	·330	53·9	34·8	44·3	55·5	26·6	W.	N.	7·5	0·08
10	·560	44·0	29·6	36·9	83·8	22·4	N.	N.	8·5	0·01
11	·861	43·3	27·1	34·5	78·2	15·0	N.	N.	0·0	
12	·922	47·8	20·5	35·0	78·0	15·1	W.	W.	10·0	
13	·686	53·9	34·1	45·0	58·0	30·7	W.	W.	10·0	0·02
14	·517	56·8	46·2	51·8	65·3	40·8	W.	W.	10·0	0·02
15	·530	57·7	48·5	52·7	64·1	42·2	S.	W.	10·0	
16	·519	54·7	46·3	50·0	70·0	36·2	S.	S.	5·0	0·03
17	29·866	50·0	28·7	38·2	82·0	24·2	calm	W.	0·0	0·01
18	30·017	50·9	27·4	39·9	78·0	19·0	S.	W.	5·5	
19	29·880	54·6	35·3	46·3	65·5	27·2	W.	N.W.	9·5	
20	·885	42·8	32·1	37·0	62·1	20·0	N.	N.	0·5	
21	29·715	48·0	25·2	35·9	54·8	14·7	N.	W.	10·0	0·41
22	28·792	44·8	29·4	39·0	55·9	28·1	N.	W.	10·0	0·01
23	28·864	41·1	31·8	36·0	68·5	24·5	N.	N.	4·5	
24	29·237	38·9	23·3	32·5	55·5	16·4	N.	N.	8·0	
25	·476	42·0	24·4	32·1	61·2	16·1	N.	N.	5·0	0·02
26	·351	49·9	42·0	44·0	54·8	38·0	N.W.	W.	10·0	0·03
27	·185	55·1	38·9	46·4	55·1	28·0	W.N.W	W.	10·0	1·14
28	·184	48·4	35·0	41·6	66·9	30·0	N.	N.	6·5	0·02
29	·473	38·8	29·9	33·8	46·0	22·0	N.W.	S.	10·0	0·46
30	·277	36·6	32·0	34·4	53·9	28·0	N.E.	N.	5·0	
Means	29·486	49·2	34·8	41·9	69·3	27·1	...	...	7·0	Sum 2·57

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DECEMBER, 1869.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·647	34·9	26·2	30·5	55·9	17·8	N.	N.	0·0	
2	·537	33·9	23·3	28·7	62·2	15·0	N.	N.	9·0	
3	·572	34·2	24·1	28·9	58·7	18·1	E.	N.	0·5	0·04
4	·409	36·2	24·1	31·8	51·8	19·0	N.E.	E.	10·0	
5	29·979	37·8	26·1	32·6	50·4	16·9	E.	E.	0·5	
6	30·024	36·4	31·1	34·4	41·5	23·2	E.	E.	10·0	
7	29·721	38·6	32·6	35·1	38·6	29·1	E.	E.	10·0	
8	·478	40·9	33·2	37·9	44·7	30·1	S.E.	S.E.	10·0	0·01
9	·455	40·9	35·7	38·7	46·9	22·2	S.E.	S.E.	10·0	0·03
10	29·439	49·0	36·2	39·4	45·3	33·1	W.	W.	10·0	0·01
11	28·941	47·7	37·1	42·8	48·9	34·8	S.W.	N.W.	10·0	0·59
12	29·030	47·7	29·1	37·7	59·0	18·1	S.	W.	5·5	0·13
13	28·888	50·5	31·1	44·0	50·5	26·1	S.W.	S.W.	10·0	0·25
14	28·978	46·8	32·0	40·0	56·0	31·2	W.	W.	10·0	0·31
15	29·018	48·0	35·7	42·0	61·8	27·0	W.	W.	0·5	0·05
16	·136	51·9	34·4	43·1	51·9	24·8	W.	W.	10·0	0·84
17	·308	48·0	38·3	42·9	63·8	29·1	W.	N.	3·0	0·21
18	29·051	55·1	40·0	50·3	55·1	30·2	W.	W.	10·0	0·16
19	28·919	55·0	40·2	45·0	57·5	32·8	W.	N.	2·0	0·13
20	29·057	43·8	35·9	39·7	65·9	26·4	W.	W.	1·5	0·15
21	28·951	38·8	35·3	37·2	43·0	27·5	E.	E.	8·5	0 02
22	29·092	40·8	30·2	34·6	40·8	24·5	N.	E.	9·0	0·05
23	·427	41·1	31·7	37·1	44·3	27·5	N.	N.	10·0	0·01
24	·587	36·8	32·7	34·9	44·2	26·0	N.E.	N.	8·0	0·03
25	·408	35·3	27·3	31·1	50·8	20·0	N.	N.E.	5·0	0·02
26	·048	28·3	22·8	25·9	40·0	14·5	E.	E.	8·5	
27	·284	31·8	20·3	26·0	32·5	15·0	N.	N.	7·5	0·02
28	·532	34·8	17·3	25·4	52·5	13·5	N.	N.W.	0·5	
29	·639	39·8	26·3	33·6	56·5	13·5	N.W.	S.W.	1·0	
30	·357	42·8	30·2	36·5	46·0	16·0	S.	S.	10·0	0·27
31	·039	45·3	34·2	40·4	45 8	28·0	S.W.	S.	10·0	0·36
Means	29·321	41·5	30·8	36·4	50·2	23·6	...	...	6·8	Sum 3·69

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JANUARY, 1870.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain
	in.	°	°	°	°	°				in.
1	28·842	47·8	39·2	43·4	57·0	31·0	S.W.	S.W.	5·5	0·09
2	29·074	47·3	39·7	44·4	51·5	31·5	S.W.	S.W.	9·5	0·17
3	·208	49·3	42·1	45·2	71·0	37·0	W.	W.	7·5	0·12
4	·314	48·3	42·1	45·0	52·5	32·5	S.W.	S.W.	6·5	0·14
5	·289	48·8	42·6	44·8	49·2	25·0	S.W.	N.W.	9·5	0·02
6	·282	50·8	34·2	41·9	54·2	23·5	S.W.	S.W.	6·0	0·12
7	29·089	48·8	38·7	43·9	51·5	31·5	N.W.	W.	10·0	0 20
8	28·627	49·3	42·6	45·3	46·3	27·0	W.	W.	10 0	0·27
9	28·827	42·8	37·2	39·9	50·0	28·5	N.W.	N.	7·0	0·04
10	29·369	39·8	30·0	34·0	68·0	27·0	N.	N.	2·0	
11	·562	38·3	24·3	31·3	47·0	15·0	W.	S.W.	7·0	0·28
12	·322	40·3	26·3	34·4	69·5	21·0	W.	N.W.	7·5	
13	·409	42·0	30·7	35·0	51·0	21·0	N.W.	S.	8·0	0·21
14	·028	49·8	38·0	42·6	63·0	35·0	S.W.	N.	7·5	0·08
15	·308	47·8	40·1	43·8	52·5	31·0	W.	S.W.	6·0	
16	29·749	49·8	41·1	45·3	58·8	33·0	N.	S.W.	7·5	
17	30·015	49·8	39·7	44·5	69·0	33·0	N.	N.	10·0	
18	·111	37·8	35·2	36·1	53·0	32·0	S.	S.W.	10·0	
19	30·020	36·3	30·2	33·2	46·5	26·0	S.E.	S.E.	9·5	
20	29·924	36·3	29·3	31·5	36·3	24·5	E.	E.	10·0	
21	·854	32·8	28·3	30·1	34·0	24·5	N.E.	N.E.	10·0	
22	·932	35·3	27·8	31·2	56·7	23·0	N.E.	N.	3·5	
23	·950	39·8	23·8	33·0	45·0	15·0	N.E.	N.E.	10·0	
24	·929	37·3	30·2	34·3	67·3	23·0	N.E.	E.	9·5	
25	·955	40·8	31·7	35·3	79·0	25·0	N.E.	E.	5·0	
26	·923	34·8	18·3	26·4	71·0	11·0	E.	S.E.	0·0	
27	·765	37·0	17·8	27·6	71·0	12·0	W.	S.E.	0·5	
28	·660	35·8	14·8	26·3	50·5	10·0	S.E.	S.	9·5	
29	·616	39·8	21·8	30·7	71·0	14·0	S.E.	S.	0·5	
30	·494	42·8	25·3	34·6	81·0	14·5	S.	S.	1·5	0·14
31	·149	46·8	30·9	39·9	65·0	25·0	S.	S.W.	9·0	0·01
Means	29·503	42·7	32·1	37·3	57·7	24·6	...	...	7·0	Sum 1·89

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FEBRUARY, 1870.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Temperature. In the Shade. Lowest.	Temperature. In the Shade. Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	Direction of the Wind. P.M	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·496	46·8	30·7	38·5	58·0	19·5	S.W.	S.W.	8·5	0·18
2	·142	44·8	41·0	42·9	48·5	36·0	S.	S.W.	10·0	0·36
3	·255	50·3	41·1	45·5	84·0	36·5	S.W.	S.	7·0	
4	·134	46·8	40·1	42·8	66·5	32·0	S.	S.	10·0	0·30
5	·351	48 6	37·9	42·6	93·5	26·5	S.	W.	7·5	
6	·372	45·3	31·2	38·8	70·0	21·0	S.	S.	10·0	0·91
7	·074	43·5	38·7	40·8	51·0	35·0	S.E.	S.E.	10·0	0·13
8	·002	44·8	38·4	41·1	83·0	29·5	S.E.	S.	10 0	0·23
9	·366	31·0	23·0	27·2	...	20·0	S.E.	E.	7·0	
10	·632	28·6	19·1	23·8	69·0	12·0	N.E.	E.	0·0	
11	·845	28·8	19·4	23·7	64·9	14·0	E.	E.	1·5	
12	·849	26·6	18·0	21·8	73·3	14·0	E.	E.	5·0	
13	·623	29·3	17·9	23·5	35·5	15·0	E.	E.	10·0	
14	·588	30·6	23·4	27·5	39·5	20·5	E.	S.	10·0	
15	·766	36·8	25·4	30·5	75·0	23·2	E.	N.E.	5·0	
16	·688	36·2	26·1	30·9	68·0	20·5	S.E.	E.	9·0	
17	·606	31·8	28·4	30·0	37·5	25·5	E.	E.	10·0	
18	·471	34·5	26·6	30·5	49·7	24·0	E.	E.	10·0	0·02
19	·514	38·0	29·2	33·4	55·2	26·7	E.	E.	10·0	
20	·660	42·0	31·1	35·7	91·5	26·5	E.	W.	10·0	0·13
21	·278	37·9	32·3	34·5	48·1	26·7	N.	N.	10·0	0·09
22	·411	35·6	23·7	29·4	76·8	16·1	N.	N.	3·0	
23	29·131	42·0	27·2	34·8	60·0	18·9	W.	W.	9·5	0·04
24	28·964	44·9	33·3	39·1	84·9	27·1	W.	N.W.	8·5	
25	29·153	44·6	28·8	33·2	84·3	16·1	N.W.	W.	4·5	0·01
26	·034	46·8	28·8	38·2	99·8	25·9	W.	N.W.	8·0	
27	·058	49·1	29·4	40·5	60·8	21·2	S.	S.	10·0	
28	·068	51·0	40·8	46·2	68·2	35·9	S.	S.W.	10·0	0·04
Means	29·374	39·9	29·5	34·6	66·5	23·8	...	...	8·0	Sum 2·44

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MARCH, 1870.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°.	Temperature. In the Shade. Highest.	Temperature. In the Shade. Lowest.	Temperature. In the Shade. Mean.	Temperature. Highst insun's rays.	Temperature. Lowst. on the grass.	Direction of the Wind. A.M.	Direction of the Wind. P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·142	52·4	45·5	48·1	68·2	39·4	S.W.	S.W.	10·0	0·65
2	·092	55·8	47·0	50·5	76·0	43·1	S.	S.	10·0	0·29
3	·232	53·8	43·3	47·3	97·0	36·2	N.W.	S.	9·5	0·08
4	·344	36·7	31·0	33·3	46·0	28·5	E.	E.	10·0	0·08
5	·673	43·8	30·8	36·5	90·0	27·8	E.	E.	5·0	
6	·890	43·8	29·3	35·2	86·2	22·5	E.	E.	6·0	0·01
7	·826	41·6	31·5	36·2	57·1	28·0	E.	E.	10·0	0·01
8	·790	43·7	34·6	38·4	76·0	31·1	E.	E.	8·0	
9	·741	47·0	35·3	40·2	75·9	30·8	E.NE	E.N.E.	10·0	
10	·634	51·7	32·3	41·3	101·0	24·1	N.	N.	8·5	0·01
11	·329	47·7	37·4	41·7	101·0	28·2	N.	N.	8·0	0·03
12	·259	41·9	30·3	35·1	93·2	21·8	N.	N.	6·0	0·23
13	·279	36·8	27·6	31·0	86·0	26·5	E.	N.	4·5	
14	·611	42·6	14·2	27·4	93·1	14·0	N.	S.	10·0	0·01
15	·443	49·9	24·1	35·2	96·2	23·8	S.W.	S.W.	10·0	0·49
16	·157	56·0	35·3	46·0	105·8	33·9	S.	N.W.	9·5	0·11
17	·368	57·8	46·0	50·6	101·7	41·2	W.	W.	7·5	
18	·694	51·6	42·3	46·5	93·0	33·0	N.	E.	10·0	
19	·991	45·9	34·1	38·5	103·0	32·9	E.	E.	5·0	
20	·948	51·1	26·1	37·5	105·0	20·3	E.	E.	5·0	
21	·802	53·0	37·3	44·7	105·0	37·2	N.E.	N.W.	9·5	0·01
22	·393	49·6	43·1	45·2	63·8	38·1	N.W.	N.W.	9·5	0·09
23	·619	37·9	27·6	32·2	96·8	21·4	N.N.W	N.	6·0	
24	·503	42·6	27·2	34·5	93·1	19·1	N.	N.	6·5	
25	·802	43·0	23·4	33·2	112·5	16·1	E.	E.	5·5	
26	·430	41·3	26·2	33·3	79·7	15·2	N.E.	N.	9·0	
27	·860	43·4	24·2	33·8	114·0	17·3	E.	E.	3·5	
28	·986	36·9	25·4	31·4	54·9	17·0	E.	E.	10·0	
29	·931	39·2	28·7	33·6	56·0	20·0	E.	E.	10·0	
30	·823	48·7	28·4	36·5	109·8	20·0	E.	E.	6·0	
31	·806	52·5	20·3	35·1	112·5	15·2	E.	E.	5·0	
Means.	29·577	46·4	31·9	38·4	88·7	26·6	...	...	7·8	2·10

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APRIL, 1870.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·732	53·7	29·8	41·1	115·2	27·0	E.	S.E.	5·0	
2	·796	56·8	22·3	38·8	118·0	17·1	S.	S.E.	0·0	
3	·931	56·8	27·4	41·5	109·7	20·0	E.	S.E.	2·0	
4	·995	54·8	23·1	38·3	117·0	14·0	S.E.	S.	0·0	
5	·847	62·0	22·2	40·6	119·0	13·9	S.E.	S.	0·0	
6	·652	60·0	20·5	40·3	119·5	12·8	S.W.	W.	0·0	
7	·519	62·6	25·2	44·0	118·2	17·1	W.	W.	0·5	
8	29·216	56·1	37·2	45·1	115·2	25·0	W.	W.	9·0	
9	28·997	48·8	39·2	42·2	88·9	32·1	S.	W.	10·0	0·36
10	29·378	50·6	35·2	41·6	113·7	26·1	W.	N.W.	8·0	
11	·671	54·3	36·4	44·2	118·9	29·2	N.W.	N.W.	6·0	
12	·699	54·8	30·3	42·5	103·8	22·0	W	W.	9·0	
13	·747	59·8	40·5	48·5	120·1	32·0	W.	W.	7·5	
14	·826	61·8	44·6	51·8	116·5	35·9	N.W.	N.	6·5	
15	29·923	62·8	36·2	48·5	125·0	24·5	N.	N.	3·0	
16	30·010	68·8	31·3	48·8	125·9	20·4	N.E.	N.	0·0	
17	29·894	71·0	32·1	51·7	132·2	24·5	W N W	E.	0·0	
18	·717	62·5	39·0	48·0	127·7	30·5	S.E.	S.E.	5·0	
19	·521	72·8	38·4	53·8	126·5	26·0	E.S.E.	S.	0·0	
20	·511	74·8	43·5	58·7	123·6	31·3	S.	S.S.W	7·0	
21	·687	66·1	39·7	51·9	131·0	28·7	S.	W.	4·0	
22	·795	62·8	33·7	46·8	117·3	26·0	S.W.	S.W.	8 0	
23	·909	57·2	36·2	45·9	130·0	23·7	N.N.W	N.W	3·0	
24	·929	57·0	39·8	46·9	117·6	29·3	N.W.	N.W.	9·0	
25	·910	60·6	45·4	51·6	136·9	38·6	N.W.	N.W.	7·5	
26	·672	54·8	39·0	46·1	118·3	24·6	N.W.	N.W.	9·5	
27	·706	52·6	32·8	41·7	117·0	24·9	N.	N.	5·0	
28	·635	45·8	31·1	38·4	93·0	28·2	N.	N.E.	9·5	
29	·544	52·2	32·7	40·4	105·3	19·2	N.	N.W.	9·5	0·19
30	·279	57·1	39 0	47·2	109·3	35·2	N.W.	W N W	10·0	
Means	29·688	59·1	34·1	45·6	117·7	25·3	...	...	5·1	Sums 0·55

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MAY, 1870.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·097	53·3	39·2	44·7	111·0	30·0	W.	W.	5·0	0·05
2	·430	52·8	32·6	40·5	111·5	23·8	N.	W N W	5·0	0·01
3	·572	51·1	28·0	39·3	89·0	16·3	N.W.	N.	10·0	
4	·750	55·4	26·0	40·3	139·0	14·3	N.W.	N.	6·5	
5	·798	57·1	30·7	42·7	132·0	19·5	N.	N.	5·0	
6	·736	60·1	36·2	47·3	128·7	25·0	N.	N.	10 0	
7	·828	63·3	35·4	49·0	137·5	23·6	S.E.	S.E.	3·0	
8	·823	60·8	38·9	48·3	128·5	26·2	S.E.	S.E.	3·0	
9	·689	57·3	29·1	42·9	131·0	20·0	E.	S.E.	4·0	
10	29·455	58·6	29·8	41·9	128·3	19·7	S.E.	S.W.	7·0	
11	28·973	53·3	38·9	45·4	95·3	25·5	S.	S.	10·0	0·77
12	28·972	56·7	46·0	50·1	104·3	39·0	S.W.	S.	9·5	0·08
13	29·129	57·1	47·0	50·9	89·0	38·8	S.W.	W.	8·0	0·18
14	·410	58·9	47·0	51·1	115·9	39·2	W.	W.	9·5	0·16
15	·488	58·9	43·5	49·8	118·9	36·8	S.W.	S.	10·0	0·74
16	·418	59·8	47·5	51·7	131·5	43·0	N.W.	N.W.	4·0	
17	·727	59·9	38·4	48·8	111·6	27·5	S.W.	S.W.	10·0	
18	·795	69·5	44·2	55·7	131·4	31·9	S.W.	S.W.	2·0	
19	·736	73·0	42·4	57·9	136·8	30·4	W.	W.	7·5	
20	·720	70·6	45·3	56·2	134·2	32·9	W	W.	10·0	
21	·709	79·4	52·1	62·6	145·3	46·0	W.	W.	4·5	
22	·573	68·0	50·1	57·5	151·2	37·3	N.W.	N.	1·0	
23	·835	58·8	41·2	48·7	114·0	28·0	S.E.	N.	10·0	
24	·840	68·9	35·1	52·0	146·0	27·0	N.	N.W.	3·5	
25	·931	67·0	43·4	52·9	144·0	30·1	N.N.E.	N.N.E.	0·0	
26	·897	68·0	34·1	51·3	146·2	26·2	E.S.E.	S.E.	0·0	
27	·780	66·5	36·8	52·3	143·2	29·6	S.E.	S.E.	4·5	
28	·687	70·9	42·4	54·5	132·2	30·5	S.E.	S.	8·0	
29	·607	68·9	46·5	56·4	143·5	37·1	W.	W.	8·0	
30	·403	66·0	50·8	55·8	123·8	43·9	S.W.	S.W.	10·0	0·11
31	·315	59·7	47·8	51·6	126·1	39·9	N.W.	W.	9·5	0·04
Means	29·584	62·2	40·2	50·0	126·5	30·3	...	...	6·3	Sum 2·15

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JUNE, 1870.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst. insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·367	58·8	48·2	51·6	110·9	40·2	N.W.	S.W.	10·0	0·08
2	·545	68·6	49·0	57·3	145·8	37·3	N.W.	S.W.	8·0	
3	·686	65·8	50·9	57·1	142·7	37·3	N.W.	WS.W.	6·0	
4	29·906	73·0	43·2	57·7	162·2	34·9	E.	N.	7·5	
5	30·035	68·8	52·3	59·8	145·3	40·0	E.	E.	5·0	
6	30·038	71·9	38·6	54·4	155·3	27·3	E.	N.E.	1·5	
7	29·972	70·6	40·4	54·6	161·8	25·7	E.	E.	7·0	
8	·715	73·6	55·3	61·9	159·9	49·3	E.	E.	4·0	
9	·402	67·7	53·6	59·0	153·1	42·9	N.	N.	9·0	
10	·294	60·9	39·7	49·3	137·8	29·5	N.W.	N.W.	10·0	
11	·418	64·7	51·1	54·9	135·5	43·8	N.W.	N.W.	9·5	
12	·692	65·2	52·5	57·1	130·9	47·8	W.	W.	10·0	
13	·717	75·8	50·0	59·9	152·0	40·1	W.	W.	9·5	
14	·685	70·8	43·9	56·0	150·2	33·6	N.W.	N.W.	4·0	
15	·707	71·0	51·4	59·0	152·9	39·9	W.	W.	9·5	
16	·519	81·9	54·0	66·2	142·8	44·5	S.	S.W.	9·0	0·23
17	·456	65·7	56·1	58·0	123·8	53·9	W.	W.	9·5	0·02
18	·604	69·8	48·2	57·2	121·5	40·7	W.	N.W.	10·0	
19	·759	75·8	51·9	61·5	149·7	42·1	S.W.	N.	3·5	
20	·807	73·4	53·4	61·2	148·9	44·8	W.	N.W.	8·0	
21	·873	83·3	48·2	64·2	172·0	39·3	W.	W.	3·0	
22	·787	83·3	53·1	67·5	160·0	...	N.E.	NNW.	4·0	
23	·743	69·4	56·1	60·4	141·9	52·8	N.E.	N.	5·0	
24	·560	65·8	46·0	52·7	125·5	31·3	N.E.	N.E.	9·0	0·03
25	·673	65·9	46·1	53·8	143·0	37·4	N.	N.	8·5	
26	·594	64·9	46·7	54·7	134·5	38·0	N.W.	N.W.	9·0	
27	·531	64·8	53·0	57·1	121·5	52·0	N.	N.	9·5	
28	·649	68·9	41·2	52·9	152·1	33·5	N.	N.	10·0	
29	·629	71·9	41·0	55·2	159·9	33·2	N.	N.W.	4·0	
30	·619	65·8	49·0	54·9	154·6	43·0	N.	N.	7·0	
Means	29·663	69·9	48·8	57·6	144·9	39·9	...	...	7·3	Sum 0·36

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JULY, 1870.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·603	62·5	46·1	52·2	142·8	39·6	N.W.	N.	9·5	
2	·561	64·8	41·1	52·3	149·7	36·0	N.	W.	7·5	0·15
3	·501	62·9	42·3	51·5	97·0	34·9	W.	W.	10·0	0·02
4	·411	70·9	52·4	60·2	127·8	51·2	N.W.	W.	9·5	0·06
5	·505	64·9	52·4	58·0	93·5	56·9	N.W.	S.W.	10·0	0·07
6	·543	69·3	55·0	59·9	145·8	54·6	W.	N.W.	8·0	
7	·647	76·9	47·3	60·9	149·5	40·0	W.	W.	1·0	
8	·532	84·5	45·0	65·3	160·3	38·8	S.E.	S.	5·0	0·41
9	·396	70·7	60·5	64·8	108·8	59·2	E.	S.E.	7·5	0·09
10	·414	72·4	58·0	63·6	135·8	56·9	W.	N.	6·5	
11	·254	73·2	50·9	59·8	139·9	45·9	E.	E.	10·0	0·01
12	·282	68·7	54·3	60·1	139·1	50·9	N.W.	N.W.	9·5	
13	·370	72·9	48·9	59·6	138·0	41·9	W.	W.	8·0	
14	·598	78·1	49·9	62·7	149·8	41·8	N.W.	W.	2·5	
15	·478	79·7	46·9	63·3	135·9	37·2	S.	S.W.	4·5	0·01
16	·433	69·7	51·0	59·8	142·0	41·5	W.	W.	6·5	
17	·618	69·4	53·0	60·4	136·4	43·1	N.	W.	8·5	
18	·616	69·1	56·2	60·5	123·9	51·6	S.	S.	10·0	
19	·860	76·7	58·7	66·4	141·2	56·4	N.W.	N.W.	8·0	
20	·819	81·4	50·0	65·4	157·0	41·2	E.	N.	3·0	
21	·721	77·3	56·5	65·4	142·7	50·3	S.W.	W.	7·0	
22	·722	86·9	54·0	69·0	162·0	45·2	N.	N.E.	0·0	
23	·622	84·9	55·3	69·5	157·3	48·9	E.S.E	S.E.	0·0	
24	·503	85·6	58·3	71·4	163·6	54·1	E.	E.	0·0	
25	·354	81·4	56·9	68·4	143·5	48·2	E.S.E.	S.	5·5	
26	·517	75·6	57·0	65·3	140·5	51·1	N.	N.	7·5	
27	·605	79·1	57·8	66·0	157·3	55·8	N.	E.	7·5	
28	·728	67·6	57·4	59·8	117·0	51·5	N.E.	N.E.	9·5	
29	·675	62·0	42·7	51·8	98·0	33·3	N.E.	E.	10·0	
30	·522	72·3	51·7	60·2	142·7	51·7	E.N.E	E.	7·5	0·08
31	·309	75·0	58·0	64·0	127·0	54·3	E.	N.	9·5	0·85
Means	29·539	73·8	52·4	61·9	137·6	47·2	...	...	6·7	Sum 1·75

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AUGUST, 1870.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·362	76·1	59·0	65·1	130·3	57·7	N.	E.	7·5	0·03
2	·445	69·0	59·0	62·6	99·3	56·3	S.E.	E.	10·0	
3	·395	69·6	60·0	62·0	87·5	58·7	N.E.	S.E	10·0	
4	·291	74·5	56·6	62·8	134·6	52·3	S.	S.	9·5	
5	·278	71·8	55·0	62·2	125·0	51·6	S.W.	S.W.	5·0	
6	·484	75·6	51·3	61·9	151·0	44·6	W.	S.W.	4·5	0·19
7	·330	72·0	56·4	60·6	127·5	50·9	S.	S.	8·5	0·07
8	·455	74·1	52·0	61·1	142·8	48·0	E.	E.	8·0	0·01
9	·638	75·1	54·1	62·7	146·0	49·4	N.E.	E.	4·0	
10	·690	71·8	49·3	59·5	131·0	42·7	N.	N.E	3·0	0·02
11	·694	77·6	45·8	60·2	139·3	41·9	N.	N.E.	0·5	
12	·772	77·1	47·6	61·5	149·0	42·8	N.	N.E.	3·5	
13	·808	77·4	56·9	64·8	142·6	46·8	N.E.	N.E.	4·0	
14	·748	65·8	48·9	56·5	129·0	43·6	N.E.	N.E.	9·5	
15	·633	71·0	53·8	60·3	130·0	45·2	N.E.	N.E	7·0	
16	·636	68·1	45·1	55·7	138·0	35·5	N.E.	E.	7·5	
17	·619	68·1	40·8	54·6	130·7	34·5	E.	N.E	5·5	
18	·450	77·8	39·7	58·6	133·0	34·0	N.W.	N.	2·5	0·35
19	·442	66·0	50·0	55·6	128·0	43·1	N.E.	N.E.	5·0	0·02
20	·606	68·1	40·3	52·2	134·0	36·7	N.E.	N.E.	7·0	
21	·743	66·6	35·2	51·0	132·8	30·0	N.E.	N.E.	4·5	0·01
22	·582	68·1	35·8	49·3	132·7	29·0	N.W.	S.W.	9·5	0·60
23	·415	62·8	49·2	55·0	119·4	39·0	W.	N.	7·0	
24	·442	68·3	47·1	57·2	137·0	41·9	N.W.	N.W.	6·5	
25	·522	66·6	44·8	55·4	132·2	37·9	N.	N.	4·5	
26	·421	62·8	45·8	53·5	127·2	39·7	N.	N.	5·5	
27	·392	64·8	39·8	51·4	130·5	32·8	N.	N.W.	6·5	0·61
28	·042	67·5	52·7	58·8	113·6	51·3	W.	N.W.	9·5	
29	·422	64·3	46·1	53·8	125·9	40·0	N.	N.W.	2·5	
30	·783	65·2	39·1	51·7	123·7	34·7	N.	N.	2·0	
31	·780	65·8	35·7	50·7	129·5	31·3	N.	W.	1·0	
Means.	29·525	70·0	48·2	57·7	129·9	42·4	...	...	5·8	3·1·91

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SEPTEMBER, 1870.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·459	67·8	38·2	52·2	120·9	32·8	W.	S.W.	6·0	0·12
2	·031	69·6	44·1	56·8	130·5	40 0	S.W.	S.W.	7·0	0·11
3	·157	64·8	45·9	54·4	119·2	40·0	N.W.	N.W.	8·0	
4	·509	66·4	38·2	52·4	125·0	33·8	S.W.	S.W.	4·0	0 20
5	·196	62·0	54·3	57·9	92·3	48·6	S.W.	S.	10·0	0 10
6	29·025	63·6	51·9	56 3	93·8	45·0	S.	S.W.	7·0	0·07
7	28·883	60·3	50·9	53·9	96·8	44·7	S.	N.W.	10 0	0·01
8	29·298	62·8	45·6	53·6	124·9	38·3	W.	W.	3·5	0·36
9	28·994	67·0	51·9	57·4	122·5	47·5	S.W.	W.	7·5	0·21
10	29·286	60·5	48·6	53·4	109·5	43·3	N.W.	N.W.	7·0	
11	·696	64·7	41·2	52·7	103·3	33·3	N.W.	N.W.	4·5	
12	·665	62·0	41·1	51·6	114·8	35·3	W.	W.	6·0	
13	·521	59·9	49·6	53·7	72·9	42·1	W.	W.	10·0	0·09
14	·472	63·4	53·0	57·3	119·8	48·9	N.W.	N.	6·0	0·02
15	·337	63·6	34·2	49·3	123·3	31·1	N.	N.	1·0	
16	·936	66·2	46·9	55·6	121·6	41·1	S.E.	S.	8·5	
17	·968	63·0	42·8	53·3	99·3	38·3	W.	N.W.	10·0	
18	·863	64·8	53·9	58·2	127·3	47·2	N.W.	N.	10·0	
19	·859	64·1	46·2	54·2	127·0	40·5	E.	S.E.	7·5	
20	·856	67·8	33·4	50·3	133·0	31·4	S.E.	S.	0·0	
21	·864	69 3	34·9	51·7	132·2	31·0	W.	S.	0·0	
22	·862	69·8	40·9	53·7	127·1	36·5	S.	S.	5·0	
23	·846	64·6	40·7	52·1	123·2	33·4	E.	E.N.E.	6·0	
24	·839	69·2	41·1	52·8	131·9	32·5	E.N.E.	S.	4·0	
25	·854	67·1	31·1	48·5	130·4	30·0	S.	S.E.	6·0	
26	·721	68·9	35·4	52·3	134·8	33·9	S.	E.	0·0	
27	·775	68·9	38·4	53·4	126·9	33·8	E.	S.E.	0·0	
28	·855	67·7	39·7	53·2	125·3	36·2	E.	E.	3·5	
29	·917	70·0	41·4	55·4	133·1	36·2	E.	E.	4·5	
30	29·983	62·8	40·2	51·1	125·4	36·0	E.	E.	5·0	
Means.	29·601	65·4	43·0	53·6	118·9	38·3	...	...	5·2	1·29

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OCTOBER, 1870.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	30·056	66·8	39·9	52·4	119·2	32·8	E.	E.	0·0	
2	·020	67·6	41·9	54·1	124·9	34·9	E.	S.E.	4·0	
3	·004	64·8	48·8	55·7	124·0	42·0	E.	E.	10·0	
4	30·036	54·2	35·0	45·1	82·8	34·0	E.	E.	5·0	
5	29·887	49·4	33·2	41·8	66·2	33·0	E.	E.	10·0	0·03
6	·660	57·4	41·7	49·1	96·9	46·4	E.	S.W.	9·5	
7	29·294	66·0	42·1	54·1	101·0	35·2	S.	S.	10·0	0·43
8	28·680	64·7	53·2	57·9	106·3	52·8	W.S.W	W.S.W	8·5	0·08
9	28·589	57·0	37·0	46·1	94·3	34·0	W.	N.	5·5	0·05
10	29·025	50·9	31·3	41·6	97·0	27·9	N.	N.	1·5	
11	29·429	54·0	23·5	38·5	110·3	24·8	N.	W.S.W	3·0	0·05
12	28·903	60·0	31·7	47·2	98·1	30·5	S.E.	W.	9·0	0·27
13	29·024	55·5	47·6	53·3	74·1	45·5	W.	W.	10·0	0·09
14	·554	56·7	41·3	48·2	111·3	37·2	N.	E.	0·5	
15	29·479	57·7	29·1	42·8	109·0	29·0	S.	S.	0·0	0·34
16	28·856	58·0	43·4	51·9	63·8	36·2	S.W.	W.S.W	10·0	0·20
17	29·104	53·0	44·0	47·8	98·1	39·6	W.	W.	2·0	
18	·387	57·3	39·1	48·3	84·6	32·3	S.W.	S.W.	9·0	0·35
19	·002	56·2	36·5	49·9	80·2	43·9	S.W.	S.W.	6·5	0·64
20	·003	52·0	41·1	48·7	63·0	38·6	W.	W.	8·5	0·04
21	·476	56·9	42·0	48·9	102·0	36·3	E.	N.W.	5·0	
22	29·322	55·8	45·0	50·2	72·8	38·3	S.W.	W.S W	10·0	0·71
23	28·475	56·6	48·2	51·2	92·5	47·0	S.W.	N.	6·5	0·67
24	28·594	52·9	42·8	47·6	71·9	42·1	W.	W.	9·5	
25	29·032	52·8	38·5	45·7	83·9	33·9	W.S.W	W.	9·5	
26	·049	48·6	43·0	44·9	67·2	41·1	W.	W.	9·5	0·14
27	·156	53·8	41·0	46·2	92·0	37·9	W.	S.W.	4·5	0·02
28	·420	54·4	43·0	48·5	89·8	36·9	W.	W.	8·5	
29	·436	55·5	46·5	50·4	56·8	41·3	W.	W.	10·0	0·33
30	·479	56·7	38·0	45·5	96·0	34·9	N.W.	W.	5·5	0·09
31	·180	59·5	42·1	50·0	78·9	40·6	N.W.	N.N.E.	10·0	0·03
Means.	29·278	56·9	40·4	48·3	90·6	37·5	...	...	6·8	Sum 4·56

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NOVEMBER, 1870.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·953	51·7	37·7	44·5	89·2	32·0	N.	N.E.	2·0	
2	30·050	50·6	25·4	37·5	92·9	25·3	E.	E.	0·0	0·01
3	·021	49·1	26·7	37·0	90·0	26·7	E.	N.	5·0	
4	·005	51·6	29·1	44·9	74·0	29·1	W.	E.	10·0	
5	30·004	50·2	40·1	44·3	62·2	40·1	E.	E.	10·0	
6	29·796	45·8	39·0	42·2	63·2	35·7	E.	N.E.	9·5	
7	·797	51·3	37·5	43·6	100·5	36·0	N.	W.	9·0	
8	·588	49·1	29·7	39·3	78·0	29·4	W.	E.	10·0	
9	·414	42·5	34·1	38·2	67·9	32·1	E.	E.	10·0	
10	·109	36·7	30·0	33·0	67·9	29·8	N.	N.	9·5	
11	29·159	38·7	30·3	34·3	44·9	29·0	N.	N.	9·5	
12	28·954	42·0	25·3	33·6	72·9	22·8	W.	W.	5·0	
13	·942	44·9	27·0	36·8	59·9	23·7	W.	W.	9·5	0·03
14	·768	47·4	33·9	40·7	78·8	28·8	W.	W.	9·5	0·08
15	·735	41·5	28·2	34·9	70·9	26·3	N.	W.	10·0	0·02
16	28·899	45·0	29·1	37·2	80·8	26·5	W.	W.	9·0	
17	29·037	39·7	21·0	29·9	70·2	19·0	W.	W.	5·0	
18	29·178	44·3	25·2	35·3	77·4	25·2	N.	W.	0·0	
19	28·893	44·7	25·3	36·1	77·2	25·3	S.	S.	9·5	0·20
20	·979	47·7	29·3	36·9	60·9	27·2	N.W.	W.	9·0	0·45
21	·860	47·7	37·0	42·3	71·1	34·0	W.	W.	6·0	
22	·737	52·8	35·6	43·9	71·2	33·1	S.	N.W.	7·0	0·30
23	·808	53·8	39·3	46·0	77·1	39·3	W.	W.	5·5	0·25
24	28·858	53·2	44·0	49·7	69·2	40·0	S.W.	S.W.	10·0	0·56
25	29·026	52·7	46·4	48·8	76 0	43·9	S.W.	S.W.	1·5	0·12
26	·388	51·8	42·1	47·0	71·0	38·0	S.	S.	9·0	0·02
27	·760	48·7	41·1	44·5	74·8	39·1	S.	S.	5·5	
28	·831	45·0	39·2	42·0	50·2	36·9	N.	S.S.E.	10·0	
29	·807	44·4	40·0	42·3	45·8	40·0	S.E.	E.	10·0	
30	29·949	42·1	35·7	39·1	48·6	32·0	S.E.	E.	10·0	
Means	29 344	46·9	33·5	40·2	71·0	31·5	...	...	7·5	Sum 2·04

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DECEMBER, 1870.

Days of Month	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest	Temperature. In the Shade. Lowest	Temperature. In the Shade. Mean	Highst. insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	Direction of the Wind. P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	30·092	39·5	27·7	33·9	50·5	21·2	E.	E.	8·0	
2	30·135	34·6	29·1	31·9	76·9	26·4	W.	W.	5·0	
3	29·850	40·8	22·6	32·3	42·3	18·5	N.	N.	10·0	0·11
4	·848	34·6	30·4	32·7	68·2	30·4	S.E.	E.	5·0	
5	·825	38·0	19·4	30·4	38·5	19·4	N.E.	N.	10·0	0·11
6	·384	42·0	34·4	37·5	65·9	33·0	N.	N.E.	9·5	0·07
7	·304	34·8	31·1	32 8	40 0	29·6	N.	N.	5·0	
8	·259	31·8	21·4	26·5	55·9	21·4	N.	N.	5·0	
9	·315	34·0	21·5	29·2	41·3	21·1	N.	N.W.	10·0	
10	·513	34·8	28·4	32·0	34·8	28·4	N.	N.	10·0	
11	29·335	41·0	31·3	35·0	62·0	31·0	N.E.	S.	8·0	0·32
12	28·826	48·8	32·0	41·2	72·8	30·5	S.	W.S.W	5·0	0·06
13	·994	48·8	43·5	46·2	72·9	37·8	S.W.	S.	10·0	0·73
14	28·656	55·8	...	...	65·3	...	S.W.	W.S.W	10·0	0·11
15	29·040	46·8	...	...	48·0	...	S.W.	S.	10·0	0·17
16	·361	43·1	...	...	44·0	...	E.S.E.	E.S.E.	10·0	0·55
17	·568	42·6	...	...	67·0	...	E.S.E.	E.	8·0	
18	·676	48·0	...	...	...	...	N.W.	W.	8·0	
19	·379	52·3	...	...	52·3	...	W.	N.W.	10·0	
20	·197	50·7	...	...	58·0	...	N.W.	N.W.	3·5	0·10
21	·359	31·3	...	...	44·5	...	S.E.	S.E.	10·0	0·04
22	·476	25·1	...	...	37·0	...	E.	N.E.	5·5	
23	·532	25·3	...	...	52·5	...	N.	N.	0·0	
24	·281	26·1	...	...	44·2	...	N.E.	N.E.	7·0	
25	·272	28·8	...	...	49·5	...	N.	N.	1·5	
26	·448	32·2	...	...	50·3	...	N.E	N.E.	7·0	
27	·425	28·8	...	...	47·0	...	N.E.	N.E.	5·5	0·10
28	·392	31·1	...	...	43·5	...	E.	E.	6 0	0·04
29	·564	30·3	...	...	38·8	...	N.E.	N.E.	8·0	
30	·718	24·1	...	...	34·3	...	E.	N.E.	0·0	
31	·827	23·6	...	...	36·0	...	N.	N.N.E.	0·0	
Means	29·447	37·1	28·7 13days	34·0 13days	51·1 30days	26·8 13days	...	...	6·9	Sum 2·51

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JANUARY, 1871.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·561	29·1	...	...	32·0	...	S.E.	S.	5·0	
2	·402	31·0	19·5	25·2	34·5	15·6	S.E.	S.	10·0	0·02
3	·548	34·4	24·1	29·4	55·8	23·8	S.E.	N.E.	5·0	
4	·616	32·4	23·2	28·7	43·0	17·0	E.	E.	10·0	
5	·441	41·1	15·9	31·4	60·0	10·8	S.W.	N.W.	5·5	0·12
6	·666	46·1	31·1	37·6	47·0	26·0	W.	S.	7·5	0·07
7	·250	42·8	33·2	37·3	49·0	30·3	W.	W.	9·5	0·10
8	29·125	38·0	30·9	34·0	58·0	25·4	N.W.	N.W.	5·5	0·56
9	28·936	34·8	29·3	32·2	48·5	25·1	S.E.	N.	10·0	0·51
10	29·170	34·8	21·2	28·5	43·0	17·6	N.W.	S.	10·0	
11	·369	31·8	27·0	30·0	36·5	27·0	N.E.	N.	7·5	
12	·713	31·8	28·0	29·1	40·6	27·3	N.	N.	5·5	
13	·728	39·2	6·0	25·7	44·5	6·0	S.W.	S.W.	10·0	0·02
14	29·442	41·5	35·2	37·9	70·0	28·6	S.W.	S.W.	9·0	
15	28·942	39·0	35·5	37·5	52·1	28·5	S.	S.W.	9·5	0·72
16	·400	41·4	35·0	37·4	54·0	32·3	S.S.W.	S.W.	4·0	0·04
17	·464	40·3	34·2	36·7	63·3	31·3	S.W.	S.W.	9·5	0·01
18	·619	37·8	30·2	33·8	63·8	27·8	S.	S.E.	9·5	0·08
19	28·907	40·0	30·9	35·4	57·8	28·8	N.W.	W.	10·0	0·15
20	29·100	37·1	32·7	34·9	46·8	30·1	E.	N.E.	10·0	0·01
21	·121	38·5	30·4	34·3	46·8	30·3	S.E.	S.E.	10·0	0·23
22	·056	39·5	29·9	34·5	50·1	27·3	S.	E.	8·0	0·20
23	·347	35·8	31·0	33·5	43·6	29·2	N.E.	N.E.	10·0	0·06
24	·617	35·0	32·0	33·2	41·0	31·7	N.E.	N.E.	10·0	0·02
25	·560	31·5	28·8	29·8	57·1	28·8	N.E.	N.E.	8·0	
26	·603	32·2	22·2	27·1	68·3	20·3	N.	N.	2·5	
27	·785	32·3	22·0	26·7	73·2	21·3	N.	N.E.	7·0	
28	·714	31·1	19·8	26·5	60·0	19·3	E.	N.N.E.	10·0	
29	·712	33·4	32·0	32·0	60·0	30·3	N.E.	N.E.	10·0	
30	·647	33·1	29·8	30·7	50·4	28·0	N.E.	E.	10·0	0·01
31	·706	33 0	28·0	30·8	44·7	28·0	S.S.E.	S.S.E.	10·0	
Means.	29·363	36·1	27·6 30days.	32·1 30 days.	51·5	25·1 30days.	...	...	8·3	Sum 2·93

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FEBRUARY, 1871.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest	Lowest.	Mean.	Highst insun's rays	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·549	31·5	28·0	29·5	40·2	28·6	S.E.	N.E.	10·0	
2	·518	39·3	28·2	32·4	53·5	29·3	N.E.	E.	10·0	0·04
3	·222	42·1	30·9	36·9	53·5	31·6	E.	S.	10·0	0·11
4	·191	48·1	37·8	42·5	55·5	31·6	S.	S.E.	10·0	0·01
5	·226	52·6	41·2	46·3	63·0	37·8	S.W.	S.W.	8·5	0 06
6	·516	51·7	42·5	46·9	84·0	37·6	N.W.	N.W.	2·5	0·07
7	·642	51·1	42·1	46·2	63·8	34·8	S.	W.	10·0	0·17
8	·483	49·1	44·5	46·7	56·0	44·4	N.W.	N.W.	10·0	
9	29·559	46·7	35·4	40·4	84·7	31·1	W.	N.W.	4·5	0·28
10	28·887	42·3	37·2	39·3	83·0	30·4	W.	N.W.	10·0	0 06
11	29·630	31·6	26·1	28·0	74·0	28·3	E.	E.S.E.	9·0	0·02
12	·213	44·4	25·3	35·0	48·4	28·6	S.	S.	10·0	0·21
13	·497	48·6	35·2	42·5	96·1	34·4	N.	W.NW	7·5	
14	·667	45·3	36·1	40·3	60·0	30·3	N.	S.W.	10·0	0·02
15	·663	50·7	39·8	44·9	95·9	41·1	S.W.	S.W.	10·0	
16	·698	47·5	39 0	43·0	92·3	38·0	S.	S.	10·0	0·02
17	·698	51·1	39·4	44·8	85·8	35·6	S.W.	W.	9·0	
18	·777	53·1	42·4	48·0	75·5	38·6	W.	W.NW	7·0	
19	·574	52·6	43·1	47·0	83·0	40·3	S.W.	WS.W.	10·0	
20	·325	49·0	44·1	45·5	100·0	41·4	W.	W.	9·5	0·19
21	·588	44·8	37·0	40·8	73·5	32·7	N.	E.N.E.	9·5	
22	·953	46·7	29·4	37·5	87·1	25·3	N.	N.W.	5·0	
23	·920	50·7	40·2	44·6	91·3	31·2	W.	W.	10·0	
24	·917	45·9	37·4	42·0	52·0	32·2	W.	N.W.	10·0	
25	·862	44·0	40·1	41·5	59·0	37·7	N.W.	W.	10·0	
26	·507	50·6	35·3	41·5	78·9	36·5	S.E.	S.	9·5	0·18
27	·312	54·2	43·2	48·3	91·0	40·2	W.	W.	9·5	0 07
28	·485	51·4	47·4	48·9	68·9	45·3	W.	N.W.	10·0	
Means	29·537	47·0	37·4	41·8	73·7	34·9	...	...	9·0	Sum 1·51

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MARCH, 1871.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·933	48·7	35·4	40·3	85·2	36·1	E.	E.S.E	8·0	
2	·881	56·5	29·5	41·3	102·0	27·3	S.E.	S.	1·0	
3	·766	61·7	30·2	44·0	109·0	27·4	S.	S.	0·0	
4	·509	56·1	35·1	45·5	100·6	31·4	S.	S.W.	5·0	
5	·493	52·0	42·2	46·3	88·2	39·3	S.W.	S.W.	9·5	0·08
6	·091	51·8	45·3	47·8	68·0	40·7	S.	S.W.	10·0	0·04
7	·342	48·8	43·7	45·0	95·6	41·2	WNW	W.	9·5	0·19
8	·503	48·1	39·4	43·0	97·4	37·4	WNW	W.	5·5	0·30
9	·788	50·2	34·1	40·2	52·1	29·4	S S W	W.	10·0	0·47
10	·661	51·4	37·1	43·5	97·0	31·2	W.	N.	7·0	0·03
11	·550	54·8	38·0	47·0	98·8	32·3	W.	W.	9·5	
12	·231	53·8	45·3	48·6	98·9	43·0	S.W.	WSW	9·0	0·04
13	·217	49·0	41·2	44·6	94·9	37·6	WSW	W.	7·5	0·01
14	·380	46·9	33·0	37·8	102·0	29·8	WSW	W.	10·0	0·09
15	·445	40·7	29·5	34·0	101·2	27·2	N.	N.	4·5	0·38
16	·100	40·8	31·9	36·1	...	30·4	N.	E.NE	10·0	
17	·813	46·1	27·4	36·2	...	26·6	N.E.	NNW	4·0	
18	·835	54·0	34·2	43·9	...	31·3	N.W.	E.NE	9·5	
19	·730	56·4	35·4	45·3	...	32·7	E.N.E.	E.NE	4·0	
20	·589	55·8	33 0	44·1	...	32·3	E.N.E.	S.W.	9·0	
21	·585	48·6	35·6	41·8	...	34·8	WSW	WSW	9·5	
22	·617	54·6	36·4	44·4	110·5	32·5	W.	E.S E	4·0	
23	·491	65·5	36·0	48·6	109·2	32·5	E.S.E	S.	0·0	
24	·360	67·7	32·3	48·9	112·3	31·0	E.	S.W.	0·0	
25	·389	63·9	35·2	50·3	115·7	32·1	S.	S.	0·5	
26	·462	63·7	43·5	53·5	114·1	38·7	S.	S.E.	7·0	
27	·631	52·0	40·3	45·5	81·3	35·3	E.	E.	6·5	
28	·931	42·8	31·0	35·7	114·8	26·2	E.	E.	7·5	
29	·929	46·6	32·0	38·2	89·2	30·0	E.NE	N.NE	9·5	
30	·843	47·7	34·0	40·5	103·5	28·8	N.	N.	10·0	
31	·627	51·8	40·2	45·0	87·4	39·1	N.	N.	10·0	
Means.	29·572	52·5	36·0	43·4	97·2 (25days)	33·1	...	...	6·7	Sum 1·63

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APRIL, 1871.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·523	51·8	43·0	45·3	112·9	38·3	N.	WNW	8·5	
2	·464	48·9	40·5	43·9	81·1	34·1	WNW	W.	10·0	0·07
3	·339	54·0	41·9	46·0	128·2	38·3	W.	N.	9·5	
4	·653	52·6	35·7	42·7	126·3	37·1	E.	N.	4·5	
5	·589	51·8	35·1	44·4	79·0	30·3	N.W.	N.N.W	9·5	
6	·679	49·0	39·7	42·4	76·1	38·3	E.S.E.	E.S.E.	10·0	
7	·675	54·0	25·7	38·8	118·1	21·5	S.E.	E.	0·0	
8	·574	57·8	28·4	41·7	120·2	21·6	E.	S.	0·0	
9	·482	49·8	38·2	43·0	83·3	34·3	E.	E.	10·0	
10	·497	53·0	34·1	41·9	124·3	29·5	E.	E.S.E.	4·0	
11	·502	53·3	32·1	41·5	85·2	29·0	S.	S.	10·0	0·40
12	·431	59·9	45·3	51·6	121·3	42·9	W.	W.	7·5	0·05
13	·588	60·6	49·4	53·4	125·2	47·3	WNW	WNW	8·0	
14	29·370	61·3	40·4	49·1	110·1	38·5	S.	S.	9·5	0·15
15	28·911	58·0	48·4	50·3	109·5	47·7	N.W.	N.W.	7·0	0·13
16	28·959	58·2	46·1	49·1	109·3	40·7	W.S.W	N.W.	9·5	0·35
17	29·046	57·0	45·0	49·5	121·8	45·0	WNW	N.W.	6·0	0·03
18	29·069	53·1	45·8	48·7	61·6	45·5	S.	S.W.	10·0	1·01
19	28·712	56·0	49·4	51·0	94·7	49·4	S.W.	W.	9·5	0·40
20	28·928	52·6	40·4	45·2	87·8	37·6	W.	N.W.	10·0	0·07
21	29·174	54·9	44·9	48·4	91·2	41·6	N.W.	W.	10·0	0·12
22	·267	57·7	48·4	51·4	112·3	47·5	W.S.W	WNW	6·5	0·09
23	·241	56·6	45·9	49·1	121·6	42·3	WNW	WNW	5·5	
24	·492	53·8	36·9	44·7	123·3	30·8	N.	N.	7·0	
25	·570	57·9	32·2	44·8	112·3	30·3	E.	S.W.	6·0	
26	·495	61·1	41·2	49·3	123·1	36·7	S.	W.	9·0	0·08
27	·343	61·3	45·5	51·0	124·3	41·8	N.N.W	NNW	5·5	0·03
28	·377	56·1	47·2	49·9	113·8	43·3	W.	S.W.	9·5	0·37
29	·062	59·8	49·5	51·1	109·7	48·3	W.	N.	10·0	0·50
30	·408	54·0	45·2	48·0	117·5	44·5	N.W.	N.W.	4·0	
Means	29·347	55·5	41·4	46·9	107·5	38·5	...	...	7·5	3·85

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MAY, 1871.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·645	57·6	36·2	45·0	125·3	30·1	N.	N.W.	2·0	
2	·642	57·1	36·4	45·9	110·3	33·1	S.	S.	10·0	
3	·425	57·5	39·2	47·5	92·8	34·3	S.	W N W	10·0	0·05
4	·526	51·2	36·2	42·6	120·5	29·3	W.	N.W.	8·5	
5	·698	58·0	32·4	45·0	122·3	26·8	N.N.W	N.W.	2·0	
6	·776	66·8	41·3	52·9	138·6	36·0	N.W.	E.	4·0	
7	·881	62·4	43·9	52·0	127·3	35·5	E.	E.	0·0	
8	·756	72·6	34·2	52·5	131·5	29·5	E.	N.W.	0·5	
9	·709	51·8	39·2	44·3	114·7	39·2	N.E.	N.N.E.	8·0	0·01
10	·753	48·8	39·3	43·2	80·4	33·1	E.	E.	10·0	
11	·645	55·5	40·1	45·1	132·5	38·5	E.	E.	5·0	
12	·552	58·2	31·1	46·0	133·5	25·6	E.	N.E.	4·0	
13	·544	48·7	35·2	40·9	109·3	29·1	E.	E.	10·0	
14	·398	55·6	31·4	43·2	125·6	26·5	E.	E.S.E.	6·0	
15	·411	55·2	42·4	46·2	132·8	35·3	E.S.E.	N.E.	7·5	
16	·412	57·6	40·2	47·7	119·2	33·0	E.	N N W	10·0	
17	·548	54·8	37·4	43·1	132·3	33·2	E.	N.E.	5·0	
18	·497	57·2	39·5	47·5	115·3	34·3	W.	W N W	10·0	0·01
19	·733	61·8	42·4	51·6	128·3	34·3	W N W	N.	8·0	
20	·818	65·1	35·4	49·8	135·5	28·8	W N W	W N W	8·0	
21	·850	68·4	46·1	55·8	146·4	37·3	N.E.	N.E.	6·5	
22	·717	69·1	40·0	54·0	138·3	33·5	S.E.	S.E.	0·0	
23	·512	71·7	45·2	57·7	140·6	38·9	E.	S.	3·5	
24	·420	78·1	40·2	59·4	151·3	32·3	E.	S.	3·5	
25	·364	64·2	56·5	58·8	122·9	47·6	E.	W	10·0	0·26
26	·532	58·4	45·8	50·0	135·6	39·3	N.NW.	N.W.	7·5	0·18
27	·530	60·1	37·9	48·9	132·6	30·3	N.E.	N.	7·5	0·49
28	·670	64·1	46·2	52·2	122·3	40·8	N.E.	N.E.	7·5	
29	·786	65·1	48·3	55·1	135·3	42·8	E.	E.	2·0	
30	·736	73·8	40·5	55·7	141·6	33·8	E.	N.W.	0·5	
31	·687	64·2	51·2	56·9	122·4	43·0	S.E.	N.E.	8·0	
Means	29·618	61·0	40·4	49·6	126·4	34·4	...	...	6·0	Sum 1·00

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JUNE, 1871.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M	Mean amt. of Cloud (0—10)	Rain.
	in.									in.
1	29·592	67°0	52°2	57°2	123°9	43°2	W.	E.	8·5	
2	·708	55·8	38·0	45·5	122·3	27·9	N.	N.	9·5	
3	·744	53·2	35·8	43·2	136·0	23 6	N.E.	N.E.	9·5	
4	·561	52·8	41·4	45·7	123·5	32·7	N.E.	E.	8·0	
5	·723	59·7	37·2	47·2	135·7	25·9	N N E.	N.E.	6·0	
6	·621	61·7	42 9	50·1	116·3	33·5	N.E.	N.E.	9·5	0·10
7	·519	58·6	42·1	47·7	126·3	32·7	N.	N.E.	8·0	
8	·497	56·9	40·8	47·3	114·4	31·3	N.E.	N.E.	7·0	
9	·508	56·7	38·9	46·2	124·3	30·3	N.E.	N.E.	10·0	
10	·530	62·7	40·3	49·7	140·9	30·8	N.E.	E.	9·0	
11	·493	64·6	42·1	51·6	138·7	34·5	E.	E.	7·5	
12	·560	66·9	47·2	53·7	147·5	40·7	S.E.	S.E.	8·0	
13	·452	58·9	44·4	51·4	89·4	32·4	S.	S.	10·0	0·51
14	·454	64·8	54·2	57·7	112·0	52·5	S.W.	S.	10·0	0·08
15	·384	67·0	57·2	59·8	115·3	54·8	N.W.	S.W.	10·0	0·06
16	·351	70·4	50·2	58·3	148·2	43·0	N.W.	S.	8·0	0·09
17	·146	62·6	50·4	55·2	96·4	44·3	N.	S.	10·0	0·98
18	·111	64·2	51·1	56·5	140·3	45·8	S.W.	S.W.	9·0	0·02
19	·125	64·1	52·2	56·4	137·2	47·3	W.	W.	8·0	0·21
20	·210	64·0	52·1	55·1	136·7	44·8	N.	N.E.	10·0	0·39
21	·399	63·7	51·8	55·5	129·8	46·4	N.	N.W.	9·5	0·10
22	·440	60·8	46·3	52·5	109·9	38·2	N.	E.	10·0	0·25
23	·410	59·5	49·4	52·8	122·1	41·2	W S.W.	E.	9·0	
24	·625	58·9	47·4	51·3	124·5	45·3	E.	E.	9·5	
25	·730	59·7	40·1	48·5	138·4	31·1	N.E.	N.	8·5	
26	·804	61·1	44·5	51·3	129·1	36·5	N.	N.E.	6·0	
27	·608	62·1	40·2	50·5	136·5	34·2	W.	W.	9·5	0·06
28	·295	63·5	53·2	56·7	117·0	48·4	W.	N.W.	8·0	0·01
29	·377	63·8	49·8	55·6	123·1	42·5	S.S.W.	S.W.	8·0	0·12
30	·317	65·8	52·8	56·3	138·5	50·1	W.	W.	8·0	0·01
Means	29·476	61·7	46·2	52·2	126·5	38·9	...	...	8·7	Sum 2·99

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JULY, 1871.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·449	65·8	50·8	56·5	135·8	45·0	S.	S.W	7·5	
2	·252	57·8	49·2	52·2	130·9	36·0	S.E.	S.E.	10·0	
3	·154	66·6	53·0	57·2	132·5	36·0	N.W.	S.W.	8·5	
4	·242	62·2	52·8	55·7	127·3	43·0	S.W.	W.	6·5	
5	·507	64·6	49·2	55·9	133·5	42·7	W.	W.	5·5	
6	·735	63·6	50·5	55·6	125·1	40·8	S.W.	S.W.	10·0	0·01
7	·527	72·1	55·9	61·5	140·5	51·3	S.W.	S.W.	6·0	0·07
8	·430	65·3	52·9	57·3	129·2	43·1	WS.W.	WS.W.	7·0	0·01
9	·530	64·7	51·6	56·3	128·5	45·3	WS.W.	WS.W.	9·0	0·20
10	·474	65·0	43·7	54·0	138·5	34·3	S.SW	S.	9·0	1·24
11	·284	61·4	50·0	52·8	121·7	46·7	NN.W.	N.W.	10·0	0·05
12	·473	62·7	47·5	54·3	117·3	37·8	N.W.	S.W.	8·5	0·05
13	·412	70·4	53·1	50·7	132·6	49·7	W.	S.W.	8·5	0·08
14	·509	68·6	59·1	61·3	122·2	56·1	S.W.	S.W.	9·5	0·05
15	·590	70·5	54·0	61·3	130·8	46·2	W.	S.W.	5·0	0·01
16	·710	75·1	60·6	65·3	142·1	56·6	N.W.	W.	7·0	
17	·635	77·7	57·9	65·3	136·5	51·1	S.	WS.W.	8·5	
18	·612	74·8	59·6	65·2	142·4	54·1	N.E.	N.W.	3·5	
19	·312	74·1	51·3	62·3	139·3	44·3	S.W.	S.W.	7·0	0·02
20	·522	68·7	53·3	59·8	101·9	44·8	N.	N.	6·0	
21	·472	67·1	54·6	59·1	121·3	48·7	S.W.	WS.W.	8·0	0·11
22	·203	65·8	56·0	59·1	135·8	52·3	WSW.	WNW.	7·0	0·10
23	·217	65·5	52·2	57·4	134·5	44·3	WSW.	WNW.	6·5	0·03
24	29·228	64·1	53·0	56·7	135·5	45·9	WNW.	WNW.	9·0	0·35
25	28·985	62·6	50·2	55·3	130·4	42·1	WNW.	WNW.	5·0	0·11
26	28·994	63·0	51·0	55·0	125·7	44·2	W.	W.	8·5	
27	29·310	69·8	48·8	58·0	140·3	39·4	W.	WNW.	4·0	0·30
28	·383	66·3	53·0	56·8	132·2	50·2	N.	N.W.	6·0	0·02
29	·342	67·7	52·7	57·0	126·1	46·0	S.W.	S.W.	8·0	0·80
30	·204	62·2	49·4	53·4	123·4	39·2	WSW.	N.	9·5	0·02
31	·565	67·8	43·3	54·5	136·1	33·1	N.W.	W.	7·5	
Means	29·396	66·9	52·3	57·5	130·6	44·8	...	...	7·5	Sum 3·63

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AUGUST, 1871.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst. insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·619	69·3	42·4	55·1	137·1	34·0	W.	W.S.W	2·5	
2	·507	75·6	40·4	57·3	141·1	32·3	E.	W.	2·0	
3	·267	74·7	47·1	60·1	130·2	38·6	S.	S.W.	1·5	
4	·330	65·0	55·3	57·5	134·1	50·1	N.W.	W.	4·5	
5	·682	68·0	44·8	55·3	131·7	34·9	W.	N.W.	6·0	
6	·796	75·0	58·0	64·8	143·5	52·4	N.W.	N.W.	5·5	
7	·714	79·8	47·6	63·6	153·5	40·3	S.	WS.W.	2·5	
8	·659	77·6	55·6	65·2	141·0	45·0	E.	S.E	2·5	
9	·682	81·3	47·1	64·3	149·3	39·2	S.E.	S.	1·5	
10	·695	83·8	51·1	68·0	148·4	43·8	E.	S.	1·5	
11	·660	84·1	52·2	68·2	154·6	44·8	S.	S.	1·0	
12	·626	83·2	53·0	67·5	152·3	39·3	S.	S.	1·0	
13	·501	85·3	53·9	69·3	153·2	37·1	E.	E.	5·0	0·16
14	·470	80·6	61·0	69·0	141·2	54·2	E.	E.	3·5	
15	·488	77·5	55·7	65·3	143·8	51·9	N.N.E.	N.E	0·0	
16	·495	80·7	52·1	65·0	145·2	42·9	E.	N.E.	1·5	
17	29·358	74·3	57·6	65·1	134·2	48·4	S.	S.	8·5	0·35
18	28·932	68·0	59·3	61·0	125·8	55·2	S.	S.W.	7·5	0·14
19	29·472	66·8	52·7	58·1	130·6	43·6	N.W.	N.W.	5·5	
20	·544	67·3	45·6	56·5	109 3	38·3	S.	S.	10·0	0·22
21	·595	71·6	60 9	64·0	120·2	58·0	W.	N.W.	9·0	
22	·615	72·0	47·4	59·0	138·9	38·8	E.	W.S.W	4·5	
23	·454	67·0	53·5	59·0	121·1	43·6	S.W.	S.W.	9·5	0·11
24	·304	65·8	54·9	48·4	106·6	48·1	S.W.	S.W.	10 0	0 19
25	·457	65·3	54·2	59·1	124·7	48·1	W.	W.	4·0	0·01
26	29·702	64·1	46·9	55·0	132·0	34·3	W.	W.NW	3·5	
27	30·007	67·7	42·0	54·0	143·4	33·3	N.	N.	4·5	
28	29·964	71·1	42·6	56·8	145·0	37·3	N.N.E.	N.N.E.	3·5	
29	·689	74·0	51·4	61·3	139·2	42·7	S.E.	S.S.E	0·0	
30	·721	77·9	53·9	64·0	145·3	48·0	S.E.	S.	5·0	
31	·549	71·0	55·4	60·4	142·4	48·4	E.	W.	6·0	
Means.	29·566	73·7	51·5	61·2	137·4	43·4	...	...	4·3	Sum 1·18

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SEPTEMBER, 1871.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·616	78·0	56·9	66·4	145·0	50·4	S.W.	S.	7·5	
2	·580	72·3	53·2	61·9	135·3	45·4	N.	N.	8·0	
3	·426	65·7	54·3	59·6	120·4	46·5	N.W.	N.W.	9·0	0·05
4	·334	65·7	56·7	59·7	98·3	54·6	S.W.	S.W.	10·0	0·02
5	·638	69·8	45·2	56·4	150·1	36·3	W.	W.	3·5	
6	·539	62·3	39·5	52·5	92·8	31·5	S.E.	S.E.	10·0	0·69
7	·536	67·2	51·1	58·3	132·3	44·7	W.	W.	7·5	0·10
8	·383	67·1	42·5	54·0	116·8	35·2	S.	S.	8 0	0·41
9	·214	62·1	52·1	54·9	117·5	47·3	W.	S.W.	9·5	0·08
10	·381	70·6	50·3	59·8	130·1	40·2	S.E.	S.E.	5·5	0·37
11	·489	73·2	54·0	62·6	122·8	50·7	S.E.	E.	7·0	
12	·698	67·6	53·8	59·6	115·3	53·5	E.	E.	8·0	
13	·782	63·8	56·7	58·9	102·5	50·7	E.	E.	9·5	
14	·798	62·4	54·5	57·1	119·0	48·8	E.S.E.	E.	10·0	
15	·737	68·7	51·7	59·5	118·1	39·4	E.	E.S.E.	4·5	
16	·763	67·9	51·3	58·9	125·1	39·4	E.	E.S.E.	9·5	
17	·741	62·7	53·1	57·4	102·5	43·8	E.	E.	10·0	
18	·688	57·0	45·5	51·0	132·2	33·2	E.	E.	8·5	
19	·618	56·7	48·2	51·4	120·6	46·4	E.	E.S.E.	9·5	
20	·488	60·0	48·1	53·3	108·3	42·6	S.E.	S.	9·0	
21	·116	61·7	39·4	50·6	120·6	32·2	S.S.E.	N.N.E.	3·5	
22	·334	57·6	39·2	48·2	115·2	29·6	W.	W.	3·0	
23	·335	52·3	34·0	42·5	75·2	26·3	W.	N.	9·5	0·66
24	·087	55·3	42·5	47·0	103·1	42·2	N.	W.	8·5	
25	·214	50·5	38·2	44·0	68·5	30·9	E.	S.E.	10·0	0·90
26	29·108	57·9	46·0	49·2	101·3	45·2	E.	E.S.E.	10·0	0·71
27	28·652	59·4	45·6	53·0	73·0	37·3	S.	S.W.	10·0	0·65
28	28·949	52·8	46·5	49·2	61·4	44·0	N.W.	N.W.	10·0	0·04
29	29·206	56·6	43·2	47·5	58·8	37 6	E.S.E.	S.W.	10·0	1·30
30	29·380	53·8	42·0	46·2	102·5	41·5	N.	N.W.	6·0	0·24
Means	29·426	62·6	47·8	54·4	109·5	41·6	...	...	8·1	Sum 6·22

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OCTOBER, 1871.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	28·734	57·8	44·2	51·2	92·7	41·3	W.	W.	8·5	0·20
2	·886	58.8	47·4	51·6	100·2	41·4	W.	N.W.	7·5	0·02
3	28·943	56·7	41·1	47·9	112·3	34·4	W.	W.	6·5	
4	29·264	55·5	35·0	45·5	104·2	29·2	W N W	W.S.W	8·5	0·03
5	·333	56·9	40·3	48·6	104·0	32·4	S.W.	W N W	4·0	0·05
6	·359	60·5	48·7	53·6	101·3	43·2	W.S.W	W.S.W	9·5	0·13
7	·180	58·1	45·7	51·6	109·5	43·3	W.	E.	10·0	0·01
8	·498	55·0	33·1	43·8	102·1	26·4	E.	N.W.	3·0	
9	·757	51·7	29·6	41·7	91·8	22·6	N.W.	E.S.E.	3 0	
10	·921	56·0	28·0	42·3	92·4	21·2	E.	S.	6·0	
11	·713	55·7	38·1	46·7	85·8	29·2	S.E.	S.E.	7·5	0·01
12	·929	56·1	33·4	44·8	92·2	28·4	S.W.	S.	0·5	
13	·952	58·0	31·0	43·9	90·2	26·7	S.W.	S W.	0·0	
14	·745	57·6	32·3	45·7	88·1	28·1	S.	S.W.	3·0	
15	·678	58·5	41·4	50·1	76·6	33·3	S.	S.W.	10·0	0·01
16	·499	60·0	48·9	53·9	92·2	43·3	S.W.	S.W.	7·5	0·01
17	·490	65·1	51·9	57·6	90·2	49·8	S.	S.	7·5	0·36
18	·367	63·7	51·1	56·0	93·2	43·0	S.	S.	9 0	0·16
19	·184	59·1	55·3	57·0	64·7	43·5	S.	S.	10·0	0·25
20	·379	57·2	45·2	51·1	81·4	40·0	W N W	N.	9·0	
21	·480	54·6	32·3	43·6	60·7	28·5	S.	S.W.	10·0	0·30
22	·882	56·3	38·5	47·4	86·5	31·6	W N W	N.N.W	4·0	
23	·835	56·9	32·3	45·7	86·3	28·6	N.W.	S.W.	9·0	
24	·778	53·7	34·3	43·4	78·0	30·5	S.	W N W	10·0	0·03
25	·902	53·1	37·2	44·6	77·4	29·3	N.	N.	10·0	
26	·821	56·8	31·6	46·0	76·4	27·8	N.	W.	9·5	
27	·534	56·4	48·5	52·1	71·2	40·3	S.W.	S.W.	10 0	
28	·289	52·8	46·2	50·0	63·6	37·5	S.	S.S.W	10·0	0·02
29	·059	53·7	45·7	49·0	66·2	39·5	S.S.E.	S.	10·0	0·14
30	·142	53·7	48·4	50·0	61 0	46·4	S.	S.E.	9·5	0·11
31	·258	52·8	46·7	48·5	63 3	43·2	E.	S.E.	9·5	0·04
Means	29·477	56·7	40·8	48·5	85·7	35·0	...	...	7·5	Sum 1·88

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NOVEMBER, 1871.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·449	51·9	45·3	47·6	77·2	43·2	E.	E.	6·5	
2	·642	46·8	42·7	44·4	58·5	37·2	E.	E.	10·0	
3	·614	46·9	42·0	43·8	60·9	40·3	E.	S.	10·0	
4	·589	47·4	39·3	43·0	66·0	37·3	E.	E.S.E.	10·0	
5	·607	43·7	32·0	37·2	65·3	25·3	E.	E.	0·0	
6	·351	42·7	31·5	36·7	55·0	24·7	E.S.E	E	9·5	0.01
7	·128	50·9	34·1	42·3	75·3	36·7	S.E.	W.	9·5	0·02
8	·037	48·8	39·2	44·1	62·4	35·2	NN.W.	W.	7·5	
9	·322	45·1	30·2	37·3	67·2	24·0	N.	W.	1·5	
10	·231	44·8	28·1	36·5	62·5	21·6	W.	W.	5·0	
11	·265	39·0	23·4	31·6	47·5	19·3	W.	N.E.	5·0	0·01
12	·560	44·1	23·4	33·3	59·2	19·3	N.E.	N.W.	0·0	
13	·824	46·9	19·0	32·1	59·8	18·3	W.	N.W.	0·0	
14	·697	46·8	23·4	36·6	50·3	20·4	S.	S.W.	9·5	0·39
15	·352	51·9	38·2	45·6	62·8	36·9	N.W.	N.W.	6·0	0·05
16	·617	42·9	36·7	39·0	56·4	30·3	N.	N.	1·5	0·03
17	·538	37·3	30·3	33·4	50·7	24·6	N.	N.	0·0	
18	·818	38 8	23·7	30·6	51·1	18·8	N.	N.	0·0	
19	·946	40·2	18·2	29·0	52·4	16·4	N.	S.W.	0·5	
20	·849	42·3	21·4	33·5	51·4	17·9	S.	S.	5·5	
21	·591	37·0	32·5	34·5	40·7	25·7	S.S.E.	S.S.E	10·0	
22	·573	40·9	29·6	34·8	42·5	29·2	S.	S.	10·0	0·05
23	·688	46·3	25·3	35·2	59·2	20·5	SS.W.	W.	6·0	
24	·478	41·8	26·2	34·9	46·1	24·7	S.E.	E.S.E.	10·0	0·08
25	·479	39·7	32·1	34·9	43·6	28·1	E.	E.N.E.	10·0	0·05
26	·500	42·4	32·3	38·2	47·4	33·3	E.	E.	10·0	
27	·548	40·9	34·1	37·1	53·8	27·6	E.	E.	9·0	
28	·491	38·9	32·1	35·2	45·4	26·9	E.	E.	10·0	
29	·446	38·7	30·4	34·3	47·2	25·5	E.N.E	N.E.	6·5	
30	·428	36·7	31·7	34·1	45·1	27·3	E.N.E.	N. E.	10·0	
Means.	29·522	43·4	30·9	37·0	55·4	27·2	...	...	6·3	0·69

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DECEMBER, 1871.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·617	41·0	32·3	36·3	70·5	27·5	N.	E.N.E.	5·0	
2	·828	37·8	26·4	31·5	48·2	16·4	N.	N.E.	0·5	
3	·603	36·7	24·9	32·0	42·2	16·0	N.	N.E.	6·5	
4	·671	32·9	23·8	28·6	39·2	14·7	N.	N.	3·5	0·02
5	·824	34·9	20·2	27·0	44·5	14·4	N.	N.W.	5·0	
6	·692	36·1	28·0	32·4	42·8	22·0	N.	N.	2·0	
7	29·674	36·9	24·1	29·8	37·6	15·4	N.	N.	0·0	
8	30·008	29·5	16·3	22·8	45·6	12·0	E.	E.	0·5	
9	29·906	34·9	17·4	28·3	42·2	12·8	E.	E.	10·0	
10	29·874	35·9	28·1	32·5	39·1	24·9	E.	E.	9·5	
11	30·091	40·9	20·0	32·1	45·4	14·4	E.	E.	8·0	0·04
12	·015	43·9	35·8	39·6	53·5	30·5	E.	W.	10·0	
13	30·018	47·8	36·1	42·3	51·2	31·1	S.W.	S.W.	7·5	
14	29·986	48·8	36·4	42·7	56·2	30·1	S.W.	S.W.	9·5	
15	·882	45·8	37·7	41·5	49·3	30·3	W.	W.S.W	9·0	0·03
16	·872	46·7	38·2	42·7	54·5	32·3	N.W.	N.	5·0	0·02
17	·875	42·0	23·1	31·0	43·3	19·3	N.	W.S.W	9·5	0·03
18	·567	49·3	42·0	46·3	54·5	35·0	WS.W.	W.	10·0	0·18
19	·454	47·6	44·8	45·8	57·9	36·3	S.W.	W.	5·5	0·56
20	·070	45·2	36·0	42·0	52·0	29·7	S.W.	S.W.	10·0	0·32
21	·431	47·2	34·7	40·5	50·1	28·1	S.W.	S.W.	9·0	0·11
22	·396	42·9	37·9	40·4	51·9	35·3	S.E.	S.E.	9·0	
23	·656	42·8	33·2	37·6	58·3	29·8	W.	S.	7·5	
24	·619	45·1	35·1	40·8	56·0	34·0	S.	S.	7·0	
25	·420	44·7	39·7	42·1	49·1	37·1	S.W.	S.	10·0	0·19
26	·257	42·8	37·9	40·1	50·1	34·8	S.	S.	8·0	0·15
27	29·109	46·4	38·1	42·6	55·4	38·1	S.W.	S.W.	2·0	0·10
28	28·891	47·3	43·0	45·1	51·1	35·7	S.W.	S.W.	10·0	0·55
29	29·292	45·1	34·7	39·3	57·3	29·6	N.W.	WS.W.	0·0	0·02
30	·305	53·1	35·2	44·7	53·1	27·8	S.S.W.	S.W.	10·0	0·17
31	·663	42·0	33·6	38·4	55·7	28·1	N.W.	N.W.	0·0	
Means	29·630	42·4	32·1	37·4	50·3	26·6	...	...	6·4	Sum 2·49

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JANUARY, 1872.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·481	44·3	33·8	39·8	50·9	26·3	S.	S.	6·5	0·25
2	·325	46·7	39·7	42·3	52·0	36·3	W.	S.W.	7·5	0·12
3	29·425	47·9	33·2	39·4	57·1	25·5	W.S.W	S.W.	1·0	0·43
4	28·976	48·9	35·2	41·2	52·5	30·3	W.	S.W.	9·5	0·64
5	28·620	48·9	39·5	43·6	51·8	35·9	W.	W.	6·0	0·23
6	29·064	44·8	35·2	39·8	48·7	31·1	W.	N.N.W	7·0	0·31
7	29·036	44·0	34·6	38·4	51·3	38·8	S.W.	W.	5·5	0·25
8	28·868	40·6	32·2	36·0	53·8	26·6	W.	N.W.	2·5	0·09
9	29·162	42·8	35·9	38·7	51·3	25·1	N.W.	N.W.	3·5	
10	·610	39·2	26·7	32·6	45·6	21·9	N.N.W	W.S.W	7·5	0·45
11	·378	51·0	35·2	44·3	60·5	28·9	W.	W.	6·0	0·01
12	·668	47·4	32·8	39·3	51·8	26·8	W.	S.W.	8·0	0.17
13	·377	51·8	42·2	46·7	52·3	40·3	S.S.W.	S.	10·0	0·43
14	·486	45·0	33·7	39·5	53·3	29·1	S.	W.	2·5	
15	·495	38·6	25·2	31·3	51·5	20·6	W.	S.S.W	5·0	0·02
16	29·437	41·8	32·2	36·3	59·7	24·1	S.W.	S.W.	9·5	0·22
17	28·976	53·3	40·2	43·2	53·3	37·3	S.S.W.	S.W.	10·0	0·34
18	·557	44·6	38·2	40·5	64·6	33·9	W.	S.W.	7·0	0·02
19	28·922	43·4	33·4	38·1	55·1	26·8	S.	S.	6·5	0·04
20	29·126	44·8	31·2	37·0	48·5	27·3	N.	N.E.	10·0	
21	29·218	41·0	25·4	32·2	47·3	22·8	E.N.E.	S.S.E.	10·0	0·01
22	28·977	42·8	35·2	39·2	42·8	30·5	S.E.	S.E.	10·0	0·50
23	·346	46·8	38·2	42·9	53·8	38·2	S.	S.S.W.	7·5	0·92
24	·275	47·0	35·8	41·4	57·7	34·6	W.	W.S.W	7·0	0·20
25	·505	46·8	38·8	43·0	54·5	38·8	S.	S.	7·5	0·65
26	28·854	44·0	36·0	40·5	58·9	30·8	S.E.	N.W.	8·5	0·11
27	29·402	44·8	39·0	41·7	62·3	37·5	N.N.W	N.N.W	9·5	
28	·563	44·6	31·5	37·7	66·8	30·1	S.W.	S.S.E.	6·5	0·20
29	·444	49·3	39·7	44·0	49·5	32·7	E.S.E.	S.E.	10·0	0·18
30	·346	48·8	43·5	46·4	52·6	43·3	S.E.	S.	10·0	0·02
31	·350	51·3	44·5	47·2	72·3	42·5	S.S.E.	S.	4·0	0·03
Means.	29·138	45·7	35·4	40·1	54·3	31·1	...	...	7·1	Sum 6·84

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FEBRUARY, 1872.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature.					Direction of the Wind.		Mean amt. of Cloud (0—10)	Rain
		In the Shade.			Highst. insun's rays.	Lowst. on the grass.	A.M.	P.M.		
		Highest.	Lowest.	Mean.						
	in.	°	°	°	°	°				in.
1	29·161	50·3	40·8	46·1	63·8	34·8	S.	S.W.	9·5	0·31
2	·200	51·2	43·2	46·3	83·1	34·9	S.W.	W.	6·0	0·01
3	·417	46·6	40·2	42·7	55·6	36·3	S.W.	S.S.W.	9·0	0·05
4	·347	47·4	41·2	43·7	63·5	35·1	S.SW	S.	9·5	0 10
5	·164	49·8	42·2	45·6	51·9	34·9	S.	S.	9·0	0·35
6	·259	50·6	42·6	45·3	77·1	42·1	NN.W.	S.W	10·0	0·08
7	·495	50·0	39·4	43·8	85·7	34·9	S.W.	S.S.W.	6·5	0·23
8	·470	52·0	41·2	46·0	96·9	40·3	S.	S.W.	6·0	0·01
9	·441	53·1	35·8	44·0	64·0	33·5	S.E.	S.W.	9·5	
10	·424	53·8	41·0	47·3	97·7	41·9	S.W.	S.	9·0	
11	·297	48·6	45·5	46·7	58·3	41·7	S.	S.	10·0	0·02
12	·121	46·7	40·3	43·0	60·2	38·5	S.E.	S.S.E.	10·0	0·11
13	·222	51·6	40·9	45·3	91·0	37·0	S.S.E.	S.S.E.	6·0	
14	·241	50·9	42·3	45·9	90·4	38·5	S.S.E.	S.	6·0	0·04
15	·172	43·4	39·0	41·2	57·6	35·3	S.E.	E.	10·0	0·02
16	·308	44·4	35·1	38·7	81·8	35·1	E.	E.	10·0	0 08
17	·328	49·8	35·4	41·9	95·2	30·6	W.	W.	5·0	
18	·229	46·9	39·1	43·0	54·0	36·3	W.	W.	10·0	0·33
19	·270	48·2	36·6	42·0	98·3	33·4	W.	W.	5·5	0·03
20	·416	48·4	35·1	41·1	97·6	27·3	W.	W.	3·0	0 02
21	·578	48·8	34·2	41·2	92·2	27·8	W.	N.W.	1·5	
22	·587	47·6	32·4	41·0	65·3	25·3	S.	S.S.W.	10·0	0 39
23	·309	49·5	42·4	45·2	86·1	41·6	S.W.	W.	8·5	0·07
24	·088	53·2	41·3	47·4	65·3	36·1	S.	W.S.W	10·0	0·14
25	·027	52·2	45·5	48·0	97·2	44·4	WSW.	W.	7·0	0·05
26	·149	47·6	42·0	43·7	63·3	38·4	S.E	N.E.	9·0	
27	·708	42·0	34·0	38·0	64·5	28·3	N.	E.	9·5	
28	·608	44·8	36·4	39·1	54·2	33·7	S.W.	WSW.	9·5	0·04
29	·265	54·8	45·2	49·7	72·1	43·3	W.	W.	10·0	0·16
Means	29·319	49·1	39·7	43·9	75·3	35·9	...	...	8·1	Sum 2·64

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MARCH, 1872.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·302	52·0	48·8	50·0	71·8	47·2	W.	WNW	10.0	0·09
2	·629	53·8	47·0	49·5	93·2	45·3	W.	WSW	10·0	0·01
3	·802	54·8	47·7	50·2	85·0	44·4	WSW	S.W.	10·0	
4	·712	58·6	38·1	46·8	105·2	29·7	S.S.E	S.	5·0	
5	·553	58·9	42·0	49·6	100·6	35·4	S.	S.	0·0	
6	29·302	56·6	38·4	46 9	101·2	28·7	E.	S.	0.5	
7	28·932	58·8	38 0	47·6	103·5	29·4	E.S.E	S.	3·5	0·08
8	28·993	54·7	44·1	49·2	99·2	41·9	WSW	S.	5·5	
9	29·490	49·6	35·1	42·7	101·3	28·4	N.	N.	3·5	
10	·833	48.6	25·8	36·5	108·7	20·4	N.	N.	7·5	
11	·786	52·8	29·1	41·3	107·0	23·8	W.	W.	5·0	
12	·595	53·0	37·2	44·0	108·8	31·3	S.W.	S.W.	9·0	0·09
13	29 447	52·2	30·4	40·1	111·5	24·4	WNW	S.W.	6·0	0·03
14	28·960	48·1	36·3	41·8	75·9	34·6	S.	S.	10·0	0·09
15	29·238	53·0	41·3	46·3	84·4	35·3	E.SE.	S.	6·5	
16	·501	55·8	44·1	49·5	89·2	40·0	WSW	W.N.W	9·5	
17	·568	52·5	43·4	47·5	67·2	34·0	WSW	W.S.W	10·0	0·23
18	·521	50·4	38·9	43·8	106·6	32·1	N.W.	N.W.	3·0	
19	·482	46·9	41·1	43·3	92·5	35·3	N.E.	N.E.	7·0	
20	·476	42·0	30 4	35·7	82·7	24·2	N.E.	N.	10·0	
21	·228	37·6	25·0	30·4	68·4	20·7	N.	E.N.E.	9·5	0·03
22	·304	39·1	27·2	32·7	81·8	22·1	N.E.	N.	8·5	0·15
23	·335	38·7	29·3	33·1	75·4	24·3	E.	E.	10·0	
24	·183	41·6	30·3	34·6	107·0	24·3	E.	E.	9 0	
25	·114	41·8	29·7	34·9	100·9	22·5	E.	N.	8 0	
26	·093	44·0	22·5	32·0	110·5	14·4	W.	W.	5·0	
27	29·040	52·7	25·1	39·7	69·0	17·1	S.S.E	S.W	10·0	0.42
28	28·879	52·8	48·2	50·0	58·0	41·3	S.W.	S.W.	10·0	0·67
29	·882	53·9	50·7	51·5	67·2	46·8	S.W.	S.SW	10·0	0·27
30	28·808	57·5	49·2	52·3	90·2	46·0	S.	S.W.	10·0	0·10
31	29·033	54·9	45·6	48 7	118·9	42·5	W.	W.	9·0	0·14
Means.	29·323	50·6	37·4	43·3	91·7	31·9	...	...	7·4	Sum 2·40

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APRIL, 1872.

Days of Month	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	28·990	55·5	41·3	48·3	100·3	31·8	S.W.	W.	8·0	0·33
2	28·978	47·2	39·2	42·0	68·3	36·3	W.	NNW	10·0	0·02
3	29·214	47·3	37·0	41·2	113·2	32·8	N.E.	E.	7·5	
4	·508	47·2	32·4	38·5	101·2	22·8	N.W.	N.	8·0	
5	29·870	50·9	37·5	42·7	120·2	31·5	N.	E.	6·0	
6	30·002	46·1	39·1	41·6	80·3	34·0	E.	E.	10·0	
7	29·968	55·7	28·4	42·0	113·5	21·4	W.	W.	5·0	0·02
8	·651	53·8	44·8	48·4	84·3	44·7	W.	N.W.	10·0	
9	·827	56·7	34·2	44·4	122·3	25·9	N.	N.	2·5	
10	·733	57·3	34·2	44·4	96·2	27·1	W.	WNW	9·5	
11	·575	64·6	42·4	51·7	122·1	32·8	S.W.	S.S.W.	3·0	
12	·313	67·6	40·5	53·5	127·2	30·0	S.W.	S.W.	1·5	
13	·760	61·4	32·4	46·4	129·2	25·3	N.E.	N.	0·0	
14	·788	62·9	31·2	46·0	133·2	24·7	E.N.E.	N.	5·0	
15	·666	64·6	33·1	48·1	129·7	26·2	W.	N.N.W	0·0	
16	·609	57·5	37·4	46·7	130·6	27·2	N.	WNW	6·5	
17	·369	51·6	37·2	42·9	119·3	32·8	N.	N.	9·0	
18	·381	50·0	35·4	42·0	112·5	26·3	N.	N.	9·5	
19	·443	46·7	35·1	39·0	115·5	25·2	N.E.	N.E.	9·5	0·02
20	29·142	50 0	23·4	36·0	120·4	16·1	E.	E.S.E.	9·0	0·16
21	28·689	42·7	32·4	34·7	97·3	26·2	N.N.E.	E.	10·0	0·17
22	·680	51·6	43·1	46·0	123·3	35·3	S.	S.	7·5	0·18
23	28·791	52·7	41·5	45·7	108·1	32·3	S.	S.	9·0	0·13
24	29·023	53·8	41·5	45·9	115·8	36·3	S.W.	S.W.	6·5	0·22
25	·281	58·0	42·2	49·3	130·4	36·3	S.W.	S.W.	7·5	0·05
26	·371	57·6	42·6	49·0	110·9	37·8	S.W.	S.	8·5	0·18
27	·279	61·9	48·2	53·9	83·9	42·9	E.	E.	10·0	0·49
28	·483	57·8	40·2	47·4	122·9	34·3	N.	N.W.	9·0	0 04
29	·915	58·6	35·0	46·8	137·3	27·5	WNW	W.	5·5	
30	·970	65·6	32·2	48·8	136·5	26·5	N.	N.	1·0	
Means	29·442	55·2	37·2	45·1	113·5	30·3	...	...	6·8	Sum 2 01

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MAY, 1872.

Days of Month	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·880	68·8	32·1	50·4	134·2	28·1	N.	N.W.	0·0	
2	·766	67·0	40·2	52·1	132·3	33·1	N.N.W	N.W.	8·0	0·03
3	·627	57·8	43·6	49·5	99·8	36·7	W.	S.W.	10·0	
4	·150	55·1	45·2	48·5	124·1	39·3	W.	W.	9·5	0·10
5	·131	56·0	44·1	48·4	134·1	39·1	W.	N.W.	8·0	
6	29·094	51·8	40·5	45·2	107·3	32·0	W.	N.W.	10·0	0·16
7	28·935	55·8	45·7	48·8	127·5	41·8	W.S.W	W.	7·5	0·30
8	28·992	52·8	42·1	45·7	134·8	37·3	N.W.	W N W	10·0	0·18
9	29·313	53·6	37·3	44·5	130·5	32·2	NNW	N.W.	7·5	0·06
10	·716	52·7	40·4	44·7	122·5	34·8	N.E.	E.	9·0	0·04
11	·668	43·4	33·3	37·5	98·5	27·1	N.E.	N.	10·0	0·35
12	·472	52·8	33·9	41·5	106·2	28·6	S.E.	S.E.	9·0	0·04
13	·316	49·8	40·5	43·7	80·4	38·1	N.	E.	10·0	0·36
14	·344	52·7	45·0	47·3	118·2	43·3	S.E.	S.E.	10·0	0·03
15	·372	60·7	41·5	48·8	134·0	35·0	N.E.	W.	8·0	0·01
16	·320	58·1	45·5	50·7	120·1	39·2	W.S.W	W.	10·0	
17	·190	50·0	43·7	45·7	62·0	42·9	E.	E.	10·0	0·25
18	·157	43·5	39·0	39·8	104·5	37·4	N.E.	N.E.	10·0	0·11
19	·319	52·8	30·4	40·4	137·3	25·5	N.E.	W.	7·0	
20	·332	55·6	29·2	42·7	132·1	21·8	S.	S.	6·0	0·06
21	·351	57·0	41·1	47·8	128·9	35·3	W.	W.	6·5	
22	·407	58·3	34·2	44·4	138·1	25·5	W.	N.N.W	5·5	0·02
23	·418	57·0	29·6	42·9	136·7	24·1	W.	S.	8·0	0·03
24	·568	61·5	31·4	46·5	135·6	24·0	N.	N.	3·0	
25	·766	59·9	36·6	47·7	128·2	28·2	N.	N.	5·0	
26	·904	61·2	49·5	54·3	123·0	46·2	N.W.	N.	10·0	
27	·901	67·2	46·1	55·4	138·1	37·8	N.	N.W.	7·0	
28	·844	66·0	48·1	54·5	140·7	41·8	N.N.W	W.	10·0	
29	·651	65·5	49·2	55·8	136·3	43·7	W.	W.	10·0	0·17
30	·594	60·9	51·1	54·6	142·8	45·8	W.	W.	7·5	
31	·519	59·8	46·1	51·1	137·1	40·2	W.	N.W.	9·0	
Means	29·452	56·9	40·5	47·4	123·4	35·0	...	...	8·1	Sum 2 32

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JUNE, 1872.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·685	59·9	36·1	47·2	147·3	27·3	N.	N.	8·0	0·32
2	·331	59·1	47·5	52·7	119·1	45·2	W.S.W	W.	9·0	0·06
3	·398	58·4	41·7	49·1	145·6	34·2	N.W.	N.W.	9·0	0·06
4	·554	58·0	45·2	50·0	135·6	37·5	N.W.	N.	8·5	0·04
5	·652	64·5	37·3	49·2	136·2	30·5	W.	W.	5·0	0·10
6	·380	56·6	41·2	47·1	87·4	33·3	W.S.W	W.	10·0	0·53
7	·216	55·9	36·2	42·5	135·3	28·2	W.S.W	W.	10·0	0·37
8	29·184	53·3	42·1	46·5	79·2	37·3	S.W.	S.W.	10·0	0·40
9	28·913	58·0	44·6	50·0	128·9	36·5	S.S.W.	S.W.	9·0	0·12
10	29·130	57·7	47·0	51·2	127·2	41·2	W.	W.	8·0	
11	·119	57·7	48·4	51·4	85·3	40·4	S.W.	W.	10·0	0·34
12	·391	58·3	46·1	51·7	94·5	37·3	W.	W.	10·0	
13	·476	67·6	53·0	58·6	144·2	51·3	N.W.	W N W	6·0	
14	·588	73·0	42·0	57·7	144·0	34·9	W.	S.	3·0	
15	·696	74·2	51·6	62·8	141·6	42·0	S.	W.	4·5	
16	·824	76·7	48·6	61·3	151·7	41·1	W.	W.	7·5	
17	·701	81·7	51·1	65·4	151·9	43·7	N.W.	S.	5·0	
18	·506	80·7	58·8	68·9	146·3	50·4	S.	S.W.	4·0	0·02
19	·353	71·3	58·4	63·9	109·9	50·6	S.	N.W.	10·0	0·35
20	·551	71·8	52·7	59·8	149·6	48·2	N.	N.N.W	7·0	
21	·533	66·9	49·8	55·0	132·1	42·5	W.	S.W.	8·0	0·10
22	·589	63·8	47·7	54·1	137·6	38·5	N.W.	W.	4·0	
23	·633	71·0	45·1	56·5	155·4	34·6	W.	S.	6·0	
24	·310	75·2	49·2	59·3	138·2	38·8	S.E.	S.	8·5	0·07
25	·127	64·3	56·2	57·9	119·5	53·5	S.	S.W.	9·5	0·05
26	·400	61·1	52·5	54·3	134·3	46·8	S.W.	W.S.W	7·0	
27	·537	60 8	50·8	54·4	118·7	45·3	W.S.W	S.W.	9·5	0 18
28	·377	64·2	54·5	57·8	130·7	52·3	W.	N.W.	6·5	
29	·511	66·6	43·0	52·8	150·9	37·5	N.	N.	3·5	
30	·463	69·8	39·9	54·3	145·6	32·5	S.	S.	7·5	0·30
Means.	29·438	65·3	47·3	54·8	130·8	40·4	...	...	7·5	Sum 3·41

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JULY, 1872.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·436	64·6	53·5	57·1	139·5	50·3	N.W.	N.W.	7·0	0·08
2	·554	66·6	54·5	59·3	144·0	50·3	N.W.	N.W.	6·5	
3	·754	68·8	45·6	55·9	142·1	35·5	N.W.	WNW	6·0	
4	·780	75·5	49·1	60·2	149·0	43·6	N.W.	WNW	3·0	
5	·654	78·6	51·1	64·7	146·6	45·7	S.	S.W.	0·5	
6	·455	80·3	49·6	65·0	147·0	42·3	N.E.	S.	4·0	
7	·264	78·8	57·8	66·6	140·1	51·5	S.	S.E.	9·0	0·06
8	·346	66·8	55·7	58·8	124·3	51·3	N.W.	WNW	7·5	0·06
9	·372	67·1	54·0	59·4	137·3	46·1	W.S.W	W.	7·5	
10	·433	70·6	48·0	58·5	153·0	37·3	S.	S.	4·0	
11	·390	68·8	57·6	61·0	131·3	54·0	S.	S.	10·0	0·55
12	·460	69·9	55·2	60·8	149·1	50·1	W.	S.S.W	6·0	0·04
13	·365	64·1	53·4	57·5	129·7	45·3	S.	W.	10·0	0·43
14	·459	66·6	50·0	56·2	139·0	40·3	N.E.	N.	10·0	
15	·484	65·4	55·0	58·3	114·8	47·8	N.N.E.	N.	9·5	
16	·471	70·7	49·5	59·0	142·9	39·1	N.W.	N.W.	3·0	
17	·488	65·2	49·2	56·6	129·5	39·3	N.E.	S.E.	9·5	
18	·574	71·4	49·0	58·8	143·6	39·4	S.W.	W.	8·5	
19	·606	70·9	49·1	58·9	145·5	40·0	W.	N.W.	5·0	
20	·628	77·8	48·2	62·1	150·3	40·3	S.W.	S.	5·0	
21	·577	83·3	55·1	69·1	151·3	48·3	S.	S.	0·0	
22	·374	82·6	53·0	68·9	148·3	43·3	S.E.	S.W.	5·5	
23	·375	77·8	44·0	61·2	152·3	43·3	W.	S.E.	5·5	0·10
24	·422	71·8	58·2	64·1	127·8	47·3	S.	S.W.	8·5	
25	·357	79·8	57·3	64·8	140·3	47·8	S.E.	N.E.	9·5	1·15
26	·396	75·5	64·4	68·2	142·5	55·1	S.W.	S.	5·5	0·10
27	·528	77·8	55·2	65·3	150·3	44·1	W.S.W	S.S.W	3·5	
28	·509	73·1	55·9	63·6	153·1	43·3	S.S.W.	S.	4·0	
29	·307	73·1	57·3	63·1	150·3	48·1	S.	S.W.	8·5	
30	·250	64·9	58·0	60·7	127·6	52·3	N.	N.E.	10·0	0·07
31	·497	64·8	41·4	52·8	140·3	28·8	N.N.E.	N.	6·0	
Means	29·468	72·0	52·7	61·2	141·4	44·7	...	...	6·4	Sum 2·64

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AUGUST, 1872.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·390	65·2	51·9	57·2	144·1	...	S.	S.W.	5·5	0·16
2	·152	69·2	51·2	57·5	149·3	...	S.	N.W.	7·0	
3	·371	67·2	47·0	55·5	147·3	...	N.	N.	7·0	0·11
4	·480	65·0	42·5	53·3	146·8	...	N.	N.W.	8·0	0·14
5	·091	64·8	54·0	57·7	118·3	...	S.	S.	10·0	0·35
6	·276	67·8	53·0	58·0	134·1	...	WS.W.	S.S.W.	7·0	0·15
7	·040	70·6	52·9	58·3	126·8	...	S.S.W.	N.W.	9·5	0·67
8	·325	69·8	53·7	59·2	130·3	...	N.	N.N.W	9·0	0·06
9	·526	71·1	49·0	58·6	132·1	...	E.	S.	5·5	0·06
10	·171	65·8	56·0	59·4	132·0	...	S.W.	S.W.	8·0	0·10
11	·376	62·0	53·2	55·6	114·5	...	WNW	W.	7·5	0·03
12	·626	63·0	50·2	55·6	133·3	...	N.W.	N.W.	7·0	
13	·764	68·3	40·5	53·8	146·5	...	N.	N.	5·0	
14	·788	72·0	44·0	57·9	143·2	...	E.	N.E.	2·5	
15	·748	68·2	45·2	56·5	142·8	...	S.E.	S.S.E.	8·0	0·02
16	·663	71·0	52·4	60·0	116·9	...	S.S.E	S.	10·0	
17	·642	80·0	48·2	63·5	148·3	...	S.	S.	0·5	
18	·694	79·4	48·2	63·8	147·6	...	E.S.E.	S.E.	0·0	
19	·689	77·4	54·4	63·8	139·3	...	E.	E.	0·0	
20	·550	78·8	56·4	64·4	139·8	...	N.E.	N.E.	4·5	
21	·478	76·2	58·2	45·8	140·3	...	E.	S.E.	8·0	
22	·559	73·2	57·7	63·1	145·3	...	N.E.	N.E.	6·5	
23	·736	72·6	53·0	61·0	146·0	...	N.	N.	5·5	
24	·804	75·1	45·6	59·4	152·1	...	S.E.	W.	3·0	
25	·666	72·3	52·5	61·8	146·5	...	S.	S.W.	6·0	0·14
26	·336	65·3	56·1	58·8	122·6	...	W.	WNW	9·0	0·04
27	·737	65·3	48·8	56·0	125·5	...	N.	N.	2·5	
28	·827	69·4	39·1	53·6	140·5	...	N.W.	N.W.	5·5	
29	·620	66·8	51·9	57·8	138·6	...	W.	W.	9·0	0·03
30	·359	62·2	54·0	56·1	121·3	...	S.W.	W.	10·0	0·27
31	·347	63·8	50·2	54·2	131·4	...	N.W.	W.	8·0	
Means	29·509	69·6	50·7	58 0	136·9	...	...	...	6·3	Sum 2·33

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SEPTEMBER, 1872.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°					in.
1	29·453	64·8	48·7	54·2	115·8	...	W.	W.	10.0	0·27
2	·369	72·4	55·2	62·5	142·4	...	S.	S	6·0	
3	·145	76·6	57·9	66·0	136·6	...	S.	S.	9·5	0·03
4	·120	75·5	59·6	67·2	142·1	...	S.S.E	S.	6·5	0·03
5	·312	69·3	58·5	62·5	134·2	...	S.W.	W.	6·5	
6	·319	66·5	55·2	60·3	115·0	...	S.W.	S.W.	7.5	
7	·397	67·0	56·2	59·8	124·8	...	W.	W.	8·5	
8	·514	66·8	43·4	55·4	142·6	...	N.W.	S.W.	4·0	0·02
9	·378	62·7	40·7	52·9	142·8	...	W.S.W	WSW	10·0	0·08
10	·497	65·0	46·4	55·1	128·0	...	W.	WNW	8·5	
11	·579	69·2	57·2	62·3	112·5	...	S.W.	S.W.	10·0	0·01
12	·755	67·6	59·5	62·6	122·5	...	S.W.	W.	6·0	
13	·852	72·8	54·4	62·8	145·3	...	W.	WNW	3·5	
14	·726	65·0	58·2	61·0	118·4	...	N.W.	N.W.	10·0	0·02
15	·606	69·1	58·7	62·4	127·0	...	N.W.	N.	10·0	
16	·524	62·8	40·4	52·1	125·6	...	W.	W.	4·5	
17	·396	67·2	50·9	58·2	119·5	...	WSW	W	8·5	0·02
18	·167	58·8	53·4	54·6	104·5	...	W.	WNW	10·0	0·02
19	·198	59·0	43·0	50·0	128·3	...	W.	N.N.W	5·0	0·11
20	·338	55·8	37·6	45·8	125·5	...	N.	N.	5·5	
21	·296	53·6	33·7	41·8	124·3	...	N.W.	N.	7·5	0·04
22	·459	53·9	31·8	42·8	132·0	...	N.	N.	2·5	
23	29·365	54·8	30·2	43·0	110·7	...	S.W.	S.W.	6·0	0·15
24	28·950	52·2	46·2	47·5	95·3	...	S.W.	S.W	9·5	0·07
25	29·186	55·4	35·4	44·2	108·9	...	N.W.	N.W.	5·5	
26	·519	56·3	43·0	48·2	128·8	...	N.W.	N.W	4·0	0.07
27	·401	61·1	41·4	51·4	110·7	...	S.W	S.W.	10·0	0·14
28	·164	66·8	52·6	55·5	123·5	...	W.	W	8·0	0·01
29	·318	59·8	48·9	52·7	117·5	...	W.	N.W.	7·0	
30	·455	61·0	35·0	47·4	134·3	...	W.	W.	5·5	
Means.	29·392	63·6	47·8	54·7	124·6	...	...	...	7·2	Sum 1·09

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OCTOBER, 1872.

Days of Month.	Mean Readg. of Barometr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain.
	in.	°	°	°	°	°				in.
1	29·311	59·8	49·3	54·0	110·5	...	S.W.	S.W.	9·5	0·06
2	28·937	62·2	53·5	57·3	95·6	...	S.W.	S.W.	8·0	0·50
3	28·968	59·8	43·0	50·0	114·3	...	S.W.	N N W.	8·5	0·06
4	29·390	55·0	32·2	43·5	117·5	...	S.	N.	4·0	
5	·766	48·8	38·0	42·8	101·3	...	N.E.	N.E.	10·0	
6	·844	56·1	30·0	43·4	114·6	...	S.E.	S.	7·5	
7	·743	60·2	36·0	48·4	116·5	...	S.	S.W.	4·5	0·11
8	·546	60·1	49·4	52·9	113·5	...	S.	W N W	8·5	0·05
9	·220	58·3	41·8	48·7	100·5	...	S.W.	N.W.	8·5	0·41
10	·104	60·1	32·8	44·2	92·1	...	S.	S.	6·5	0·23
11	·052	50·8	41·0	44·2	110·3	...	W.	W.	5·0	0·05
12	·220	52·3	32·0	41·5	101·3	...	W.S.W	W N W	5·0	
13	·335	47·2	31·9	40·6	92·5	...	N.W.	N.N W	6·0	
14	·550	51·1	27·0	39·1	102·2	...	N.	N.NW.	0·0	0·01
15	29·343	49·3	28·7	38·0	100·3	...	N.N.E.	S.E.	1·0	0·87
16	28·787	45·8	33·2	40·3	86·8	...	W.	S.W.	10·0	0·02
17	29·130	51·9	35·0	42·7	79·0	...	N.NE	E.	6·5	0·19
18	·164	52·1	40·7	45·1	71·0	...	E.	E.NE	10·0	0·20
19	·212	54·8	41·7	47·6	80·7	...	S.E.	S.S.E.	9·0	
20	29·202	51·7	44·2	46·4	72·6	...	N.E.	E.	10·0	0·17
21	28·997	54·8	44·5	49·0	71·8	...	S.E.	S.	9·0	0·01
22	29·054	51·5	42·5	46·2	100·1	...	N.	N.	9·0	
23	29·298	51·9	28·6	40·0	100·4	...	E.	W.	2·5	0·09
24	28·770	50·7	36·5	44·5	54·9	...	S.W.	S.	10·0	1·06
25	·764	52·0	42·7	46·4	90·1	...	S.	S.	8·0	0·93
26	28·785	51·6	44·5	46·7	89·6	...	S.	S.	8·0	0·08
27	29·181	55·3	45·2	49·2	94·5	...	W.S.W	W.S.W	7·0	
28	·315	54·7	43·1	47·7	85·3	...	N.	E.	9·0	
29	·594	56·8	37·3	47·5	82·4	...	S.W.	W.	10·0	0·11
30	·205	56·7	51·1	52·7	60·5	...	W.	W.	10·0	0·45
31	·201	51·0	47·1	48·3	57·8	...	W N W	W.	9·5	
Means	29·225	54·0	39·5	46·1	92·3	...	...	...	7·4	Sum 5·66

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NOVEMBER, 1872.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature.					Direction of the Wind.		Mean amt. of Cloud (0—10)	Rain.
		In the Shade.			Highst insun's rays.	Lowst. on the grass.	A.M.	P.M.		
		Highest.	Lowest.	Mean.						
	in.	°	°	°	°	°				in.
1	29·119	55·4	43·2	48·6	84·8	...	S.	S.	6·0	0·26
2	28·876	48·9	42·4	45·0	90·8	...	W.	W.S.W	10·0	0·54
3	29·385	50·1	42·2	45·7	87·2	...	W N W	WNW	10·0	0·02
4	·537	57·5	36·9	46·0	62·1	...	S.W.	S.W.	9·5	0·57
5	·352	59·0	44·4	52·4	65·6	...	S.W.	N.W.	10·0	
6	·425	60·5	48·4	54·8	82·4	...	W.	W.	10·0	0·02
7	·823	54·9	46·2	49·8	91·6	...	W.	W.	1·0	
8	·817	53·9	42·4	48·5	64·1	...	S.W.	W.S.W	9·0	
9	·667	49·4	40·4	44·4	60·7	...	N.N.W	W.	8·5	0·13
10	·340	42·9	34·4	37·9	71·9	...	W.	N.	5·0	0·03
11	·534	41·6	32·2	36·7	66·8	...	N.	N.	9·0	
12	·583	44·8	34·4	39·0	64·1	...	N.E.	E.N.E.	7·5	
13	·641	38·1	30·4	33·8	60·6	...	N.E.	E.N.E.	4·0	0·04
14	·321	41·2	30·2	35·1	72·5	...	E.	N.E.	7·5	0·03
15	·456	41·5	32·2	37·1	45·1	...	E.	N.E.	6·0	0·53
16	·097	38·7	33·0	35·3	44·4	...	E.	E	10·0	
17	29·233	41·9	32·0	36·3	53·0	...	E.	W.	9·5	0·06
18	28·961	42·6	30·2	35·9	48·4	...	W.	S.E.	9·5	0·25
19	·966	48·6	32·0	38·6	49·1	...	W.	S.	10·0	0·22
20	28·989	49·8	35·1	42·7	73·0	...	S.W.	W.S.W	3·0	
21	29·199	52·4	35·1	44·7	70·3	...	WSW	S.	4·0	0·36
22	29·030	52·3	46·4	47·9	67·1	...	WSW	W S W	5·0	0·56
23	28·639	54·6	39·8	48·2	58·6	...	S.W.	S.W.	10·0	0·10
24	·915	50·7	43·3	45·9	61·6	...	S.W.	S.W.	3·5	0·16
25	·781	54·1	39·4	46·9	54·1	...	S.	S.W.	10·0	0·35
26	28·997	55·8	44·7	49·8	60·5	...	W.	W.	7·0	0·22
27	29·281	52·9	46·0	48·9	63·6	...	W.	W.	7·0	
28	29·269	48·7	41·1	44·3	60·2	...	W.	W.	8·0	0·16
29	28·991	49·4	37·4	42·0	74·2	...	W.	S.S.E	3·0	0·17
30	28·476	49·0	38·3	44·0	67·2	...	S.	S.	8·5	0·45
Means.	29·223	49·4	38·5	43·5	65·9	...	...	...	7·4	Sum 5·23

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DECEMBER, 1872.

Days of Month.	Mean Readg. of Baromtr. reduced to 32°	Temperature. In the Shade. Highest.	Lowest.	Mean.	Highst insun's rays.	Lowst. on the grass.	Direction of the Wind. A.M.	P.M.	Mean amt. of Cloud (0—10)	Rain
	in.	°	°	°	°	°				in.
1	28·602	45·6	41·2	43·0	60·2	...	S.	S.	9·5	0·26
2	29·060	46·6	37·1	42·3	55·1	...	E.	E.S.E.	7·0	0 20
3	·062	44·2	40·3	42·5	48·4	...	E.N.E.	E.	10·0	
4	·387	38·8	34·0	36·0	54·3	29·7	N.	N.	2·5	
5	·511	39·0	23·4	30·6	43·1	18·1	N.	S.	8·0	0·48
6	·032	47·7	39·0	43·4	52.5	34·0	W.	W.	4·5	0·35
7	29·030	46·6	35·8	41·2	61·0	32·0	W	W.	7·0	0·10
8	28·956	48·5	37·1	42·3	49·3	31·7	WSW.	S.S.W.	7·5	0·38
9	·641	42·6	37·0	39·5	65·1	35·0	W.	W.	5·0	0·20
10	28·523	38·2	33·3	35·9	42·3	30·0	S.W.	E.N.E	9·5	0·06
11	29·022	40·1	33·2	36·3	48·5	31·2	N.	N.	3·0	0·10
12	·540	35·0	23·4	28·7	63·3	18·4	N.	W.	5·0	
13	·271	46·5	35·0	40·7	49·1	31·0	S.W.	WSW.	10·0	0·14
14	·004	40·1	32·1	36·7	40·3	29·8	E.	S.E.	10·0	0·41
15	·293	47·0	35·6	41·9	49·1	35·9	S.E.	S.E	10·0	0·02
16	29·862	44·2	35·0	39·8	46·2	31·0	W.	S.E.	10·0	1·11
17	28·897	46·0	38·4	42·5	49·3	39·3	W.NW	N.W	9·5	0·10
18	29·325	42·6	35·5	38·6	46·2	31·6	N.W.	N.W.	8·5	0·17
19	·166	40·2	31·9	36·7	45·3	28·1	E.	N.	10·0	0·02
20	·106	46·6	34·0	39·1	47·4	34·0	S.E.	S.E.	10·0	0·54
21	·049	51·6	40·1	46·1	63·1	35·1	S.	S.W.	10·0	0·12
22	·423	54·6	42·8	49·7	63·9	33·6	S.W.	S.W.	5·0	
23	29·145	52·1	46·6	48·9	58·0	39·5	S.W.	S.W	8·5	
24	28·814	48.8	43·5	46·1	54·5	38·8	S.	S.	10·0	0·18
25	28·626	50·3	45·2	47·8	55·8	42·9	S.	S.	10 0	
26	29·182	50·5	44·0	47·0	76·3	39·9	S.W.	S.W.	2·5	0·08
27	·308	49·3	42·9	46·7	67·3	37·1	S.	S.	9·5	0·05
28	·189	48·3	46·4	47·0	60·3	43·9	S.	S.S.E.	10·0	0·05
29	·301	49·6	45·2	47·3	58·3	40·9	S.	S.	9·0	0·03
30	·483	45·8	40·5	42·2	54·5	38·3	W.	W.	7·0	0·15
31	·117	47·0	39·5	44·2	49·1	33·9	S.W.	S.W.	10·0	0·22
Means	29·111	45·6	37·7	41·6	54·1	33 7 28 days	...	...	8·0	Sum 5·52

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SUMMARY.

Month.	Mean Reading of the Barometer (reduced to 32°)	Temperature. In the Shade. Highest.	Lowest.	Mean of all the Highest.	Mean of all the Lowest.	Adopted Mean.	Dew Point.	Mean of all the Highest in the sun's rays.	Mean of all the Lowest on the grass.	Degree of Humidity (Saturation = 100).	Wind. Proportion of N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Amount of Cloud.	Rain. No. of Days it fell.	Amount collected.
	in.	°	°	°	°	°	°	°	°												in.
January	29·111	50·1	15·8	40·0	27·9	34·2	32·0	55·0	21·6	91	3	4	2	1	2	8	5	6	6·8	18	3·80
February	·410	49·8	17·4	40·6	30·0	35·1	33·2	68·3	25·0	93	4	3	3	3	4	5	4	2	8·5	18	2·27
March	·425	51·7	21·8	43·0	29·1	35·3	30·7	87·9	22·1	83	11	5	2	4	1	1	3	4	8·2	11	1·16
April	·655	77·6	25·3	64·3	40·8	50·9	44·0	110·7	33·4	78	4	5	7	3	2	3	5	1	5·0	9	0·97
May	·458	78·0	33·2	65·1	43·7	52·7	47·0	113·9	35·5	81	1	3	2	2	6	11	4	2	7·3	18	2·55
June	·740	88·7	37·5	72·9	47·9	58·5	49·4	129·9	39·7	72	7	5	6	1	3	1	4	3	5·5	5	2·79
July	·501	82·1	41·4	73·8	51·8	60·5	57·7	127·3	44·4	91	4	1	2	1	4	6	6	7	6·8	14	2·51
August	·415	76·5	40·2	68·4	49·0	57·4	51·9	121·0	41·3	82	2	1	1	2	8	4	5	8	7·0	17	3·90
September	·769	82·5	35·2	73·4	49·3	60·5	54·5	122·5	41·7	81	2	4	5	3	3	2	7	4	5·1	2	0·28
October	·135	72·6	31·0	58·5	41·1	49·5	45·3	89·1	35·0	86	3	2	5	4	6	3	4	4	7·0	22	7·25
November	·405	57·2	24·4	50·6	36·2	43·1	40·0	71·8	31·0	89	7	4	1	1	2	6	6	3	7·1	19	3·82
December	·726	56·6	24·3	46·6	36·4	41·6	39·4	57·1	31·3	92	3	2	0	2	12	6	4	2	7·9	13	2·39
Year	29·479	88·7	15·8	58·1	40·3	48·3	43·8	96·2	33·5	85	51	39	36	27	53	56	57	46	6·8	166	33·69

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SUMMARY.

Month.	Mean Reading of the Barometer (reduced to 32°)	Temperature. In the Shade. Highest.	Lowest.	Mean of all the Highest.	Mean of all the Lowest.	Adopted Mean	Dew Point.	Mean of all the Highest in the sun's rays.	Mean of all the Lowest on the grass.	Degree of Humidity (Saturation = 100).	Wind. Proportion of N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Amount of Cloud.	Rain. No. of Days it fell.	Amount collected.
	in.	°	°	°	°	°	°	°	°												in.
January	29·372	52·0	16·1	46·9	35·0	41·2	38·3	62·8	30·0	90	1	1	0	1	2	7	10	9	7·8	23	4·32
February	·228	58·6	21·4	46·4	32·7	39·1	37·0	72·0	27·0	93	4	2	0	0	2	7	6	7	7·2	22	3·79
March	·223	58·0	15·3	46·6	32·7	38·7	34·9	83·9	27·7	87	4	7	4	2	6	2	5	1	7·9	15	2·26
April	·431	72·8	30·0	54·8	39·0	45·8	40·8	100·6	32·6	84	1	2	10	2	3	6	5	1	6·9	18	2·32
May	·513	70·9	25·7	58·8	37·7	47·5	38·3	111·0	29·8	70	6	3	5	3	4	0	4	6	5·8	10	1·87
June	·469	81·0	39·7	69·1	49·7	57·9	50·9	121·0	42·2	78	1	3	1	1	9	9	4	2	6·6	16	3·17
July	·484	83·2	40·2	68·8	50·5	58·4	51·0	123·9	42·4	76	4	5	3	1	1	4	5	8	6·8	12	1·55
August	·351	74·8	38·7	66·6	49·6	56·8	49·5	119·0	41·6	76	2	1	0	0	5	8	6	9	7·5	20	2·97
September	·260	65·8	37·1	60·9	48·9	53·9	50·1	100·6	42·4	87	0	0	0	0	7	8	10	5	8·3	26	6 97
October	·624	67·6	30·2	56·7	44·5	50·3	47·4	87·0	39·0	90	6	6	7	3	4	3	2	0	7·9	16	1·74
November	·498	57·9	25·6	49·7	36·9	43·4	40·0	71·4	31·2	87	7	1	0	1	2	5	8	6	7·2	16	3·04
December	·493	56·3	23·1	47·6	36·5	42·6	40·3	58·5	30·6	91	0	0	0	1	3	8	11	8	7·6	20	3·24
Year	29·412	83·2	15·3	56·1	41·1	48·0	43·2	92·6	34·7	84	36	31	30	15	48	67	76	62	7·3	214	37·24

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SUMMARY.

Month.	Mean Reading of the Barometer (reduced to 32°)	Temperature. In the Shade. Highest.	Lowest.	Mean of all the Highest.	Mean of all the Lowest.	Adopted Mean.	Dew Point.	Mean of all the Highest in the sun's rays.	Mean of all the Lowest on the grass	Degree of Humidity (Saturation = 100).	Wind. Proportion of N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Amount of Cloud.	Rain. No. of Days it fell.	Amount collected.
	in.	°	°	°	°	°	°	°	°												in.
January	29·205	54·5	1·0	38·2	27·0	32·9	29·4	56·7	23·7	87	5	8	1	3	2	5	5	2	7·1	17	4·02
February	·598	52·9	29·6	48·7	38·3	43·4	40·7	70·0	32·8	90	1	0	2	1	4	6	6	8	8·6	21	2·48
March	·811	54·4	19·3	41·7	30·3	35·3	32·7	77·6	26·6	90	3	5	14	1	3	1	3	1	8·0	21	3·77
April	·341	61·0	29·2	55·1	41·0	46·8	43·0	100·7	36·2	87	3	1	1	1	1	6	9	8	8·3	21	2·79
May	·420	78·8	25·5	60·5	42·2	50·2	44·9	114·7	36·6	82	1	3	7	3	9	5	2	1	7·5	12	2·39
June	·643	77·8	36·4	65·6	46·7	54·9	49·3	120·5	41·5	81	11	5	1	1	3	1	3	5	7·0	12	1·66
July	·432	77·6	39·2	67·9	48·7	57·2	50·6	121·4	42·3	79	5	2	2	4	2	3	8	5	6·8	18	3·99
August	·527	83·1	40·1	69·8	50·2	58·9	51·3	123·2	44·8	76	1	1	3	2	2	10	7	5	6·5	11	2·53
September	·618	76·7	32·4	64·0	48·2	55·4	49·7	116·0	41·0	82	5	1	4	1	2	6	6	5	7·2	15	2·28
October	·458	63·6	28·1	55·0	40·5	47·8	45·1	88·6	33·3	91	8	1	2	2	2	6	7	3	7·3	24	3·48
November	·822	58·4	20·6	46·5	31·7	39·2	34·8	71·7	25·1	85	9	2	7	3	2	1	4	2	6·5	7	1·48
December	·565	55·8	17·7	42·9	29·9	37·2	36·2	56·1	24·5	97	7	3	6	0	1	2	5	7	7·1	10	1·58
Year	29·495	83·1	1·0	54·7	39·6	46·6	42·3	93·1	34·0	86	59	32	50	22	33	52	65	52	7·3	189	32·45

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SUMMARY.

Month.	Mean Reading of the Barometer (reduced to 32°)	Temperature. In the Shade. Highest.	Lowest.	Mean of all the Highest	Mean of all the Lowest	Adopted Mean.	Dew Point.	Mean of all the Highest In the sun's rays	Mean of all the Lowest on the grass.	Degree of Humidity (Saturation = 100).	Wind Proportion of N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Amount of Cloud.	Rain. No. of Days it fell.	Amount collected.
	in.	°	°	°	°	°	°	°	°												in.
January	29·423	52·3	19·8	41·7	31·9	36·7	33·7	56·0	26·7	9a	2	2	8	3	1	5	7	3	8·5	14	5·34
February	·671	56·8	23·7	48·3	36·0	41·6	38·2	79·2	29·4	89	6	1	0	0	1	3	11	7	6·6	12	2·21
March	·529	57·2	22·5	50·6	35·1	42·1	38·1	87·3	28·6	86	10	0	3	0	1	3	8	6	7·5	18	1·84
April	·490	65 8	19·4	56·3	36·5	45·0	38·9	105·7	28·5	79	5	3	5	2	1	4	4	6	6·8	13	2·61
May	·530	81·7	32·3	66·2	45·0	54·3	46·6	124·5	36·9	75	2	0	2	5	7	4	10	1	6·5	8	1·52
June	·688	81·8	34·4	70·7	45·9	57·0	47·8	129·6	36·6	71	10	4	0	3	2	1	5	5	5·5	3	0·46
July	·603	89·8	38·8	76·8	52·4	63·0	53·4	132·9	44·8	71	4	7	7	1	1	2	3	6	4·8	4	0·98
August	·443	86·3	40·3	69·5	52·3	59·7	56·0	115·5	45·0	88	3	2	3	3	4	4	6	6	7·2	15	4·78
September	·381	85·5	38·8	67·3	47·6	56·7	51·3	117·8	39·9	81	1	1	4	8	8	2	4	2	5·7	12	5·05
October	·502	64·8	24 6	54·8	38·0	46·0	42·1	96·0	31·1	87	6	2	3	2	2	2	8	6	6·6	16	2·74
November	·540	56·1	21·4	45·2	33·8	39·8	36·4	66·5	28·0	88	5	2	10	2	3	2	4	2	8·0	13	1·65
December	·061	57·6	31·7	50·4	39·8	45·3	42·7	61·2	32·6	91	0	1	1	7	3	8	6	5	7·8	27	5·71
Year	29·488	89·8	19·4	58·2	41·2	48·9	43·8	97·7	34·0	83	54	25	46	36	34	40	76	55	6·8	155	34·89

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1869.

SUMMARY.

Month.	Mean Reading of the Barometer (reduced to 32°)	Temperature. In the Shade. Highest.	Lowest.	Mean of all the Highest	Mean of all the Lowest	Adopted Mean.	Dew Point.	Mean of all the Highest in the sun's rays	Mean of all the Lowest on the grass.	Degree of Humidity (Saturation = 100).	Wind. Proportion of N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Amount of Cloud.	Rain. No. of Days it fell.	Amount collected.
	in.	°	°	°	°	°	°	°	°												in.
January	29·529	55·6	23·3	47·1	35·2	40·9	38·9	65·4	28·8	93	1	0	0	2	10	10	6	2	8·0	15	3·77
February	·500	58·1	27·7	49·8	38·7	43·9	40·1	80·6	31·9	86	3	0	2	1	0	8	9	5	8·0	19	2·52
March	·350	54·2	24·3	44·0	31·5	37·0	32·2	87·6	25·7	83	5	3	13	1	2	1	2	4	8·7	15	1·53
April	·529	77·4	29·4	59·5	40·3	48·5	42·0	111·8	33·9	79	3	2	6	1	5	5	5	3	6·5	12	1·54
May	·344	65·0	29·1	57·4	41·6	48·0	42·3	118·0	36·0	81	5	1	10	2	5	3	3	2	8·9	18	4·03
June	·632	81·2	33·3	64·2	43·8	52·7	45·7	123·4	37·6	78	7	6	3	1	3	1	6	3	6·8	9	1·23
July	·629	87·8	40·1	73·0	50·3	60·4	52·4	135·3	43·0	75	4	4	1	1	5	6	6	4	6·0	9	0·75
August	·682	86·1	32·4	69·9	47·9	57·9	49·2	128·9	40·0	72	3	3	7	2	1	2	5	8	5·6	11	1·55
September	·340	73·2	31·9	64·4	48·9	55·8	50·6	101·5	40 9	84	3	0	3	1	4	4	13	2	7·6	19	5·72
October	·582	73·0	26·3	56·3	40·9	48·3	44·3	94·7	33·3	87	11	1	1	0	6	2	8	2	7·0	13	2·01
November	·486	57·7	20·5	49·2	34·8	41·9	38·7	69·3	27·1	90	11	1	0	0	2	0	13	3	7·0	19	2·57
December	·321	55·1	17·3	41·5	30·8	36·4	35·4	50·2	23·6	96	7	2	7	2	2	2	7	2	6·8	22	3·69
Year	29·494	87·8	17·3	56·4	40·4	47·6	42·6	97·2	33·5	84	63	23	53	14	45	44	83	40	7·2	181	30·91

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1870.

SUMMARY.

Month.	Mean Reading of the Barometer (reduced to 32°)	Temperature. In the Shade. Highest.	Lowest.	Mean of all the Highest.	Mean of all the Lowest.	Adopted Mean.	Dew Point.	Mean of all the Highest in the sun's rays.	Mean of all the Lowest on the grass	Degree of Humidity (Saturation = 100).	Wind Proportion of N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Amount of Cloud.	Rain. No. of Days it fell.	Amount collected.
	in.	°	°	°	°	°	°	°	°												in.
January	29·503	50·8	14·8	42·7	32·1	37·3	34·9	57·7	24·6	92	4	4	3	3	3	8	4	2	7·0	14	1·89
February	·374	51·0	17 9	39·9	29·5	34·6	33·0	66·5	23·8	94	2	1	9	3	6	2	3	2	8·0	12	2·44
March	·577	57·8	14·2	46·4	31·9	38·4	32·6	88·7	26·6	85	7	1	15	0	2	2	1	3	7·8	14	2·10
April	·688	74·8	20·5	59·1	34·1	45·6	34·7	117·7	25·3	66	4	1	2	4	3	2	7	7	5·1	2	0·55
May	·584	79·4	26·0	62·2	40·2	50·0	40·7	126·5	30·3	71	5	0	1	6	3	5	7	4	6·3	9	2·14
June.....	·663	83·3	38·6	69·9	48·8	57·6	48·2	144·9	39·9	71	7	2	4	0	1	2	7	7	7·3	4	0·36
July	·539	86·9	41·1	73·8	52·4	61·9	51·5	137·6	47·2	69	5	2	6	2	2	1	8	5	6·7	10	1·75
August	·525	77·8	35·2	70·0	48·2	57·7	48·5	129·9	42·4	72	8	9	4	1	2	2	2	3	5·8	10	1·91
September	·601	70·0	31·1	65·4	43·0	53·6	43·3	118·9	38·3	82	2	0	6	2	6	4	5	5	5·2	10	1·29
October	·278	67·6	23·5	56·9	40·4	48 3	44·5	90·6	37 5	87	3	0	6	1	2	6	11	2	6·8	19	4·56
November	·344	53·8	21·0	46·9	33·5	40·2	36·8	71·0	31·5	88	5	1	6	1	4	2	10	1	7·5	11	2·04
December	·447	55·8	*9·0	37·1	...	...	...	51·1	...	91	8	7	4	3	2	2	3	2	6·9	13	2·51
Year	29·510	86·9	9·0	55·9				100·1		81	60	28	66	26	36	38	68	43	6·7	128	23·54

* This is the 9 a.m. reading; the Minimum was probably 2° or 3° lower.

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1871.

SUMMARY.

Month.	Mean Reading of the Barometer (reduced to 32°)	Temperature. In the Shade. Highest.	Lowest.	Mean of all the Highest.	Mean of all the Lowest.	Adopted Mean	Dew Point.	Mean of all the Highest in the sun's rays.	Mean of all the Lowest on the grass.	Degree of Humidity (Saturation = 100).	Wind. Proportion of N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Amount of Cloud.	Rain. No. of Days it fell.	Amount collected.
	in.	°	°	°	°	°	°	°	°	°											in.
January	29·363	46·1	6·0	36·1	27·6	32·1	30·8	51·5	25·1	94	3	7	3	4	4	5	2	3	8·3	18	2·93
February	·537	54·2	25·3	47·0	37·4	41·8	39·5	73·7	34·9	93	2	1	2	2	4	4	7	6	9·0	15	1·51
March	·572	67·7	27·4	52·5	36·0	43·4	37·9	97·2	33·1	81	5	2	5	2	5	5	6	1	6·7	10	1·63
April	·347	61·3	25·7	55·5	41·4	46·9	41·8	107·5	38·5	83	4	0	4	1	4	2	7	8	7·5	16	3·85
May	·618	78·1	31·1	61·0	40·4	49·6	41·8	126·4	34·4	74	2	5	11	2	3	0	3	5	6·0	6	1·00
June	·476	70·4	35·8	61·7	46·2	52·2	47·0	126·5	38·9	83	5	8	4	1	3	3	4	2	8·7	15	2·99
July	·396	77·7	43·3	66·9	52·3	57·5	52·2	130·6	44·8	83	2	1	0	1	2	10	9	6	7·5	20	3·63
August	·566	85·3	40·4	73·7	51·5	61·2	53·8	137·4	43·4	84	2	2	5	2	7	4	5	4	4·3	7	1·18
September	·426	78·0	34·0	62·6	47·8	54·4	49·0	109·5	41·6	82	3	0	9	5	3	3	4	3	8·1	14	6·22
October	·477	65·1	28·0	56·7	40·8	48·5	45·9	85·7	35·0	92	2	0	2	3	8	7	5	4	7·5	18	1·88
November	·522	51·9	18·2	43·4	30·9	37·0	33·4	55·4	27·2	87	4	3	10	2	4	1	4	2	6·3	9	0·69
December	·630	53·1	16·3	42·4	32·1	37·4	35·8	50·3	26·6	94	6	1	5	1	3	9	4	2	6·4	15	2·49
Year	29·494	85·3	6·0	55·0	40·4	46·8	42·4	96·0	35·3	86	40	30	60	26	50	53	60	46	7·2	163	30·00

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SUMMARY

Month.	Mean Reading of the Barometer (reduced to 32°)	Temperature. In the Shade. Highest.	Lowest.	Mean of all the Highest.	Mean of all the Lowest.	Adopted Mean.	Dew Point.	Mean of all the Highest in the sun's rays.	Mean of all the Lowest on the grass.	Degree of Humidity (Saturation = 100).	Wind. Proportion of N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Amount of Cloud.	Rain. No. of Days it fell.	Amount collected.
	in.	°	°	°	°	°	°	°	°												in.
January	29·138	53·3	25·2	45·7	35·4	40·1	37·8	54·3	31·1	92	1	1	0	4	7	7	8	3	7·1	27	6·84
February	·319	54·8	32·4	49·1	39·7	43·9	41·0	75·3	35·9	90	1	0	2	3	7	7	8	1	8·1	22	2·64
March	·323	58·9	22·5	50·6	37·4	43·3	39·4	91·7	31·9	86	4	2	4	1	6	6	6	2	7·4	14	2·40
April	·442	67·6	23·4	55·2	37·2	45·1	38·6	113·5	30·3	85	8	2	5	0	3	5	4	3	6·8	13	2·01
May	·452	68·8	29·2	56·9	40·5	47·4	40·4	123·4	35·0	77	5	3	2	2	2	1	10	6	8·1	18	2·32
June	·438	81·7	36·1	65·3	47·3	54·8	49·1	130·8	40·4	81	3	0	0	1	6	6	10	4	7·5	17	3·41
July	·468	83·3	41·4	72·0	52·7	61·2	53·5	141·4	44·7	76	2	3	0	3	9	4	4	6	6·4	10	2·64
August	·509	80·0	39·1	69·6	50·7	58·0	50·8	136·9	...	77	5	3	3	2	6	3	5	4	6·3	15	2·33
September	·392	76·6	30·2	63·6	47·8	54·7	49·4	124·6	...	82	3	0	0	0	3	7	11	6	7·2	16	1·09
October	·225	62·2	27·0	54·0	39 5	46·1	43·1	92·3	...	90	4	2	3	2	6	6	6	2	7·4	21	5·66
November	·223	60·5	30·2	49·4	38·5	43·5	40·2	65·9	...	88	2	2	3	1	4	7	10	1	7·4	22	5·23
December	·111	54·6	23·4	45·6	37·7	41·6	38·9	54·1	33·7	91	3	1	3	3	7	6	6	2	8·0	25	5·52
Year	29·337	83·3	22·5	56·4	42·0	48·3	43·5	100·4	...	85	41	19	25	22	66	65	88	40	7·3	220	42·09

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GENERAL SUMMARY.

Year.	Mean Reading of the Barometer (reduced to 32°)	Temperature. In the Shade. Highest.	Lowest.	Mean of all the Highest.	Mean of all the Lowest.	Adopted Mean	Dew Point.	Mean of all the Highest in the sun's rays.	Mean of all the Lowest on the grass.	Degree of Humidity (Saturation = 100).	Wind. Proportion of N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Amount of Cloud.	Rain. No. of Days it fell.	Amount collected.
	in.	°	°	°	°	°	°	°	°	°											in.
1865	29·479	88·7	15·8	58·1	40·3	48·3	43·8	96·2	33·5	85	51	39	36	27	53	56	57	46	6·8	166	33·69
1866	·412	83·2	15·3	56·1	41·1	48·0	43·2	92·6	34·7	84	36	31	30	15	48	67	76	62	7·3	214	37·24
1867	·495	83·1	1·0	54·7	39·6	46·6	42·3	93·1	34·0	86	59	32	50	22	33	52	65	52	7·3	189	32·45
1868	·488	89·8	19·4	58·2	41·2	48·9	43·8	97·7	34·0	83	54	25	46	36	34	40	76	55	6·8	155	34·89
1869	·494	87·8	17·3	56·4	40·4	47·6	42·6	97·2	33·5	84	63	23	53	14	45	44	83	40	7·2	181	30·91
1870	·510	86·9	9·0	55·9	...	...	...	100·1	...	81	60	28	66	26	36	38	68	43	6·7	128	23·54
1871	·494	85·3	6·0	55·0	40·4	46·8	42·4	96·0	35·3	86	40	30	60	26	50	53	60	46	7·2	163	30·00
1872	·337	83·3	22·5	56·4	42·0	48·3	43·5	100·4	...	85	41	19	25	22	66	65	88	40	7·3	220	42·09
	29·464	89·8	1·0	56·4	7 years 40·7	7 years 47·8	7 years 43·7	96·7	...	84	50	28	46	23	46	52	72	48	7·1	177	33·10

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TABLE showing the Mean RAINFALL, and the number of Days on which Rain fell in the six weeks previous to each day, from JANUARY 11th to 31st, in the years 1865 to 1873.

	1865.		1866.		1867.		1868.		1869.		1870.		1871.		1872.		1873.		Mean.	
	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.
11	0·06	16	0·10	23	0·13	26	0·06	12	0·17	34	0·12	32	0 09	19	0·12	25	0·18	35	0·11	25
12	·07	17	·11	24	·13	27	·05	12	·17	33	·12	32	·09	19	·13	26	·18	35	·12	25
13	·09	18	·11	24	·13	26	·05	13	·17	32	·13	33	·09	20	·14	27	·17	35	·12	25
14	·09	19	·11	24	·12	25	·05	14	·17	32	·13	33	·09	19	·14	27	·17	35	·12	25
15	·09	19	·12	24	·12	24	·05	13	·17	31	·13	33	·11	20	·14	27	·18	36	·12	25
16	·09	18	·12	24	·10	23	·05	14	·17	31	·13	33	·11	20	·14	28	·17	36	·12	25
17	·09	18	·11	24	·10	22	·06	15	·16	31	·13	33	·10	20	·15	29	·16	36	·12	25
18	·07	18	·11	24	·10	22	·08	16	·15	30	·13	33	·11	21	·15	30	·19	36	·12	26
19	·07	18	·11	25	·10	22	·09	16	·15	29	·13	32	·11	22	·15	31	·18	36	·12	26
20	·07	18	·11	25	·10	21	·09	16	·15	29	·13	31	·11	23	·15	31	·18	36	·12	26
21	·07	18	·12	26	·10	21	·11	16	·14	28	·13	30	·12	24	·15	32	·18	36	·12	26
22	·07	17	·12	27	·10	21	·12	17	·14	27	·11	29	·11	24	·16	32	·18	36	·12	26
23	·07	17	·12	27	·10	21	·12	17	·14	27	·11	28	·11	24	·19	33	·18	37	·13	26
24	·06	16	·12	27	·10	21	·13	18	·14	26	·10	27	·10	24	·19	34	·18	36	·12	25
25	·07	17	·12	27	·10	21	·13	17	·13	25	·10	26	·09	23	·21	35	·17	35	·12	25
26	·09	18	·12	27	·09	21	·13	17	·12	24	·10	25	·09	22	·21	35	·17	34	·12	25
27	·09	19	·12	27	·09	21	·14	17	·12	24	·08	24	·08	21	·21	34	·14	33	·12	24
28	·09	18	·13	28	·10	21	·13	16	·13	24	·07	23	·08	21	·21	34	·14	32	·12	24
29	·09	19	·13	28	·10	21	·13	16	·13	24	·07	22	·08	21	·21	34	·14	32	·12	24
30	·08	19	·13	28	·11	22	·13	16	·14	25	·07	22	·08	22	·20	34	·14	31	·12	24
31	·09	19	·14	28	·11	23	·13	16	·14	25	·06	22	·07	21	·19	34	·13	30	·12	24

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TABLE showing the mean RAINFALL, and the number of Days on which Rain fell in the six weeks previous to each day, from FEBRUARY 1st to 29th, in the years 1865 to 1873.

	1865.		1866.		1867.		1868.		1869.		1870.		1871.		1872.		1873.		Mean.	
	in	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.
1	0·09	20	0·15	29	0·11	23	0·13	15	0·15	25	0·07	22	0·07	20	0·20	34	0·12	30	0·12	24
2	·09	21	·15	30	·11	24	·14	16	·14	25	·07	22	·07	21	·20	35	·12	31	·12	25
3	·09	22	·16	31	·11	25	·14	15	·14	25	·07	21	·08	22	·20	36	·12	31	·12	25
4	·09	22	·17	32	·12	26	·14	15	·13	24	·08	21	·08	23	·20	37	·12	31	·13	26
5	·10	23	·17	33	·11	26	·14	15	·13	24	·08	20	·08	24	·21	37	·12	32	·13	26
6	·10	24	·17	33	·11	26	·14	16	·13	23	·10	21	·08	25	·20	37	·12	31	·13	26
7	·10	25	·18	34	·12	26	·14	16	·12	23	·11	21	·08	25	·21	37	·12	30	·13	26
8	·10	26	·17	34	·13	27	·14	16	·12	23	·11	22	·08	24	·19	37	·12	29	·13	26
9	·10	26	·17	34	·13	27	·14	16	·11	23	·11	22	·09	25	·19	36	·12	28	·13	26
10	·10	26	·17	34	·14	27	·15	17	·11	23	·10	21	·09	26	·19	35	·11	28	·13	26
11	·10	25	·17	34	·14	28	·15	17	·12	24	·10	20	·09	27	·19	36	·11	28	·13	27
12	·10	26	·17	34	·13	28	·15	17	·13	24	·09	19	·09	28	·19	36	·10	27	·13	27
13	·10	25	·17	33	·13	27	·15	18	·12	23	·09	18	·09	27	·18	35	·10	26	·13	26
14	·10	24	·18	33	·13	28	·15	19	·12	22	·09	17	·09	28	·17	35	·10	25	·13	26
15	·10	24	·18	33	·13	29	·15	19	·11	21	·08	16	·09	28	·16	35	·08	24	·12	25
16	·11	24	·18	34	·13	29	·15	19	·11	21	·08	15	·09	28	·16	35	·08	23	·12	25
17	·11	25	·17	33	·12	29	·15	20	·10	21	·08	14	·09	27	·15	34	·08	22	·12	25
18	·11	26	·17	32	·10	28	·15	20	·10	21	·08	14	·09	26	·15	34	·08	22	·12	25
19	·11	25	·16	31	·10	28	·15	21	·10	21	·07	13	·07	25	·15	34	·07	21	·11	24
20	·11	25	·16	30	·10	27	·15	22	·10	22	·07	13	·07	25	·15	35	·06	20	·11	24
21	·11	25	·15	29	·10	27	·15	22	·10	22	·07	14	·07	25	·14	34	·06	19	·11	24
22	·11	24	·14	29	·10	27	·14	22	·10	22	·07	13	·07	25	·15	34	·06	18	·10	24
23	·10	24	·14	29	·10	27	·13	21	·10	22	·07	14	·07	25	·15	34	·06	18	·10	24
24	·09	24	·13	29	·10	27	·13	20	·11	23	·06	13	·07	24	·14	34	·07	18	·10	24
25	·10	24	·13	29	·10	28	·13	19	·11	23	·06	13	·07	24	·14	35	·07	19	·10	24
26	·10	25	·13	29	·10	29	·13	19	·11	24	·06	13	·05	24	·14	34	·08	19	·10	24
27	·10	26	·12	29	·10	30	·12	18	·10	24	·06	13	·05	24	·13	33	·07	19	·09	24
28	·10	26	·12	29	·10	30	·11	18	·10	24	06	14	·05	23	·13	33	·08	19	·09	24
29	...	...	...	...	...	...	·12	18	...	...	...	...	...	...	·13	33				

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TABLE showing the mean RAINFALL, and the number of days on which Rain fell in the six weeks previous to each day, from MARCH 1st to 31st, in the years 1865 to 1873.

	1865.		1866.		1867.		1868.		1869.		1870.		1871.		1872.		1873.		Mean.	
	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.
1	0·10	26	0·12	28	0·10	30	0·10	18	0·11	25	0·08	15	0·05	22	0·13	33	0·05	19	0·09	24
2	·10	27	·12	27	·10	30	·10	19	·11	26	·08	16	·05	21	·13	34	·05	19	·09	24
3	·10	27	·12	27	·10	30	·08	19	·11	27	·09	17	·05	20	·13	33	·05	19	·09	24
4	·11	28	·11	26	·10	30	·08	19	·11	28	·09	18	·04	19	·12	32	·05	19	·09	24
5	·11	29	·11	25	·10	30	·08	20	·11	28	·09	18	·04	19	·10	31	·05	19	·09	24
6	·11	28	·11	26	·09	30	·07	19	·11	28	·09	19	·04	19	·09	30	·06	19	·09	24
7	·11	28	·11	26	·09	30	·08	20	·11	28	·09	20	·04	19	·08	30	·06	19	·09	24
8	·10	27	·11	27	·09	30	·08	20	·11	29	·09	20	·04	20	·08	29	·06	20	·08	25
9	·09	26	·11	27	·09	30	·08	20	·11	30	·09	20	·06	21	·08	29	·07	21	·09	25
10	·08	26	·11	27	·09	30	·08	21	·11	29	·09	21	·06	22	·07	28	·07	22	·08	25
11	·08	27	·10	26	·09	30	·09	22	·09	28	·09	22	·06	22	·07	27	·07	23	·08	25
12	·08	26	·11	27	·09	30	·09	23	·08	27	·10	23	·06	23	·07	27	·07	23	·08	28
13	·08	26	·10	26	·10	30	·08	23	·08	26	·09	22	·06	23	·07	27	·07	24	·08	25
14	·07	25	·10	25	·10	30	·08	23	·07	25	·09	21	·06	24	·06	27	·07	25	·08	25
15	·07	24	·09	25	·10	29	·07	22	·06	24	·10	21	·07	25	·06	26	·07	25	·08	25
16	·07	23	·10	25	·10	28	·07	23	·07	24	·09	21	·07	24	·06	25	·09	25	·08	24
17	·07	22	·09	25	·10	28	·08	24	·07	24	·09	21	·06	23	·07	25	·09	25	·08	24
18	·07	22	·09	25	·10	28	·08	24	·07	25	·09	20	·06	22	·06	24	·09	24	·08	24
19	·06	21	·09	24	·10	28	·07	24	·08	25	·09	20	·06	21	·06	23	·09	23	·08	23
20	·06	20	·08	24	·10	27	·08	25	·08	26	·06	19	·06	20	·05	22	·09	23	·07	23
21	·06	19	·08	23	·10	27	·08	25	·08	26	·06	19	·06	19	·05	22	·09	24	·07	23
22	·06	19	·07	23	·09	27	·08	26	·08	25	·06	19	·06	19	·05	23	·09	25	·07	23
23	·06	19	·08	23	·10	27	·07	26	·07	24	·06	19	·05	18	·05	23	·09	26	·07	23
24	·06	19	·07	23	·09	27	·07	26	·07	23	·06	19	·05	17	·05	22	·09	25	·07	22
25	·06	20	·06	22	·10	27	·08	27	·06	22	·06	19	·05	16	·05	21	·09	24	·07	22
26	·06	20	·06	22	·10	27	·08	26	·05	21	·06	19	·04	15	·05	21	·09	24	·07	22
27	·06	20	·06	22	·10	28	·08	25	·05	22	·06	19	·04	15	·06	21	·09	24	·07	22
28	·07	21	·06	22	·10	27	·08	25	·05	23	·06	19	·04	14	·08	21	·09	24	·07	22
29	·07	22	·06	21	·10	27	·08	25	·05	24	·06	19	·04	14	·08	21	·09	25	·07	22
30	·06	21	·06	21	·10	27	·07	24	·05	23	·06	19	·04	13	·08	22	·09	26	·07	22
31	·05	20	·06	22	·09	26	·07	23	·05	22	·06	19	·04	13	·08	22	·09	27	·07	22

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TABLE showing the mean RAINFALL, and the number of days on which Rain fell in the six weeks previous to each day from APRIL 1st to 30th, in the years 1865 to 1873.

	1865.		1866.		1867.		1868.		1869.		1870.		1871.		1872.		1873.		Mean.	
	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.
1	0·05	19	0·06	23	0·09	26	0·07	22	0·05	21	0·06	18	0·04	13	0·09	22	0·09	27	0·07	21
2	·05	19	·06	24	·09	25	·07	21	·05	22	·06	18	·04	14	·09	22	·09	27	·07	21
3	·05	19	·06	25	·09	25	·07	21	·05	22	·05	17	·04	13	·09	22	·09	27	·07	21
4	·05	19	·07	26	·09	26	·07	20	·05	22	·05	16	·04	13	·08	21	·10	28	·07	21
5	·05	20	·07	26	·09	26	·07	20	·05	23	·05	16	·04	13	·07	20	·10	28	·07	21
6	·04	19	·07	25	·09	25	·07	20	·06	24	·05	15	·04	13	·07	19	·10	28	·07	21
7	·04	18	·07	25	·10	26	·07	21	·05	23	·05	15	·04	13	·07	19	·09	27	·06	21
8	·04	17	·06	24	·10	26	·07	22	·05	23	·05	14	·04	13	·07	19	·08	27	·06	21
9	·03	16	·07	24	·10	26	·07	22	·05	22	·06	15	·04	12	·07	19	·08	27	·06	20
10	·03	15	·07	24	·10	26	·06	21	·05	21	·06	15	·03	11	·07	18	·08	26	·06	20
11	·03	14	·08	24	·10	27	·04	20	·05	20	·06	14	·04	12	·07	17	·08	25	·06	19
12	·03	14	·09	25	·10	28	·04	19	·04	19	·04	13	·04	13	·06	16	·07	24	·06	19
13	·03	13	·09	25	·10	29	·04	18	·04	18	·04	12	·04	13	·06	15	·07	23	·06	18
14	·03	14	·09	26	·12	30	·04	17	·05	18	·03	11	·05	14	·06	15	·07	22	·06	19
15	·02	13	·09	27	·12	31	·04	17	·05	18	·03	10	·05	15	·06	15	·06	22	·06	19
16	·02	13	·09	28	·12	30	·04	16	·06	19	·03	10	·06	16	·06	15	·07	22	·06	19
17	·03	14	·08	27	·12	29	·04	16	·06	20	·03	9	·06	17	·06	15	·07	22	·06	19
18	·04	15	·08	27	·12	28	·03	16	·06	20	·03	8	·08	17	·06	14	·07	23	·06	19
19	·04	16	·08	26	·12	29	·05	17	·06	20	·03	8	·09	17	·06	15	·06	22	·07	19
20	04	16	·08	27	·12	29	·06	17	·06	20	·03	8	·08	17	·07	16	·06	21	·07	19
21	·04	15	·08	27	·13	29	·06	17	·06	20	·03	7	·08	17	·07	17	·06	20	·07	19
22	·04	14	·08	27	·12	29	·06	17	·06	20	·03	6	·08	16	·07	18	·05	19	·07	18
23	·04	14	·08	26	·12	29	·07	17	·06	21	·02	5	·08	15	·08	18	·05	18	·07	18
24	·04	13	·08	26	·11	29	·07	17	·06	21	·02	5	·08	14	·08	18	·05	18	·07	18
25	·04	13	·08	26	·11	29	·07	18	·06	21	·02	5	·08	13	·08	18	·05	18	·07	18
26	·04	13	·08	26	·11	30	·07	18	·06	21	·01	4	·07	13	·08	19	·05	18	·06	18
27	·04	13	·07	26	·11	31	·07	18	·06	20	·01	3	·07	14	·09	20	·04	18	·06	18
28	·04	13	·09	26	·11	30	·07	18	·06	19	·01	3	·08	15	·09	20	·04	19	·07	18
29	·04	13	·09	26	·11	30	·07	18	·05	18	·02	4	·09	16	·09	20	·04	19	·07	18
30	·04	13	·09	26	·10	30	·07	17	·04	17	·02	4	·09	16	·09	20	·04	19	·06	18

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TABLE showing the mean RAINFALL, and the number of Days on which Rain fell in the six weeks previous to each day, from MAY 1st to 31st, in the years 1865 to 1873.

	1865.		1866.		1867.		1868.		1869.		1870.		1871.		1872.		1873.		Mean.	
	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.
1	0·04	14	0·09	26	0·10	30	0·07	16	0·04	16	0·02	5	0·09	16	0·09	20	0·04	19	0·06	18
2	·04	15	·09	27	·10	29	·07	16	·04	15	·02	5	·09	16	·09	20	·04	18	·06	18
3	·04	15	·09	27	·10	28	·07	15	·06	16	·01	4	·09	17	·09	19	·04	18	·07	18
4	·04	16	·08	26	·08	27	·07	14	·07	17	·01	4	·09	17	·09	20	·05	18	·06	18
5	·05	17	·07	26	·08	26	·07	14	·07	18	·01	4	·09	17	·09	20	·05	19	·06	18
6	·04	17	·07	26	·07	25	·06	13	·08	19	·01	4	·09	17	·09	21	·05	20	·06	18
7	·04	16	·07	25	·07	24	·06	13	·08	20	·01	4	·09	17	·10	22	·06	21	·06	18
8	·05	17	·07	26	·07	23	·06	13	·08	20	·01	4	·09	17	·09	22	·06	21	·06	18
9	·06	17	·07	26	·07	24	·07	14	·09	20	·01	4	·09	18	·08	22	·06	21	·07	18
10	·06	17	·08	27	·08	24	·07	14	·09	20	·01	4	·09	18	·07	22	·06	20	·07	18
11	·07	18	·08	27	·08	23	·07	15	·09	20	·03	5	·09	18	·08	22	·05	20	·07	19
12	·07	19	·08	27	·08	24	·07	16	·09	20	·03	6	·09	18	·08	22	·05	19	·07	19
13	·07	20	·08	26	·09	25	·07	16	·09	20	·04	7	·09	18	·08	22	·05	19	·07	19
14	·07	20	·08	25	·09	25	·07	16	·09	19	·04	8	·09	17	·08	22	·05	19	·07	19
15	·07	20	·08	24	·09	25	·07	16	·09	18	·06	9	·09	17	·08	23	·05	19	·08	19
16	·07	20	·07	23	·09	24	·07	16	·09	19	·06	9	·09	17	·08	23	·05	18	·07	19
17	·07	20	·07	22	·09	24	·07	16	·09	19	·06	9	·09	17	·09	24	·05	19	·08	19
18	·07	21	·07	22	·09	24	·07	16	·09	19	·06	9	·09	18	·09	25	·05	18	·08	19
19	·07	21	·07	21	·09	24	·08	16	·09	20	·06	9	·09	18	·09	24	·05	18	·08	19
20	·07	21	·07	21	·10	24	·08	15	·10	20	·06	9	·09	18	·09	25	·05	18	·08	19
21	·08	22	·07	20	·10	24	·08	16	·10	21	·05	8	·09	18	·09	25	·05	18	·08	19
22	·08	22	·07	19	·09	24	·09	17	·10	21	·05	8	·09	18	·09	26	·05	19	·08	19
23	·08	21	·06	18	·09	23	·09	18	·10	21	·05	8	·08	17	·09	27	·05	20	·08	19
24	·08	22	·05	17	·09	22	·10	19	·10	21	·05	8	·08	16	·09	27	·05	20	·08	19
25	·07	21	·05	17	·10	22	·10	19	·10	22	·05	8	·09	17	·09	27	·05	20	·08	19
26	·07	21	·07	17	·09	22	·10	19	·09	21	·05	8	·09	17	·09	27	·06	21	·08	19
27	·07	20	·07	16	·09	22	·10	18	·10	21	·05	8	·10	17	·09	27	·06	21	·08	19
28	·07	20	·06	15	·10	23	·10	18	·10	21	·05	8	·09	16	·09	27	·06	20	·08	19
29	·06	19	·06	15	·10	23	·10	18	·10	20	·05	8	·09	15	·09	28	·05	19	·08	18
30	·06	19	·06	15	·10	23	·10	17	·10	20	·05	9	·06	14	·09	28	·05	18	·07	18
31	·06	19	·06	15	·09	22	·08	16	·10	20	·06	10	·05	13	·09	27	·05	19	·07	18

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TABLE showing the mean RAINFALL, and the number of Days on which Rain fell in the six weeks previous to each day, from JUNE 1st to 30th, in the years 1865 to 1873.

	1865.		1866.		1867.		1868.		1869.		1870.		1871.		1872.		1873.		Mean.	
	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.	in.	Days.
1	0·08	20	0·07	15	0·08	21	0·06	15	0·10	19	0·06	11	0·05	12	0·10	27	0·05	19	0·07	18
2	·08	21	·07	15	·09	21	·06	14	·10	20	·06	11	·05	11	·10	27	·06	20	·07	18
3	·08	21	·07	16	·09	21	·05	13	·10	20	·06	11	·05	10	·09	27	·06	21	·07	18
4	·08	21	·08	17	·09	21	·05	13	·10	19	·06	11	·05	10	·09	27	·06	22	·07	18
5	·08	21	·08	18	·09	21	·04	12	·10	29	·06	11	·05	10	·09	27	·06	21	·07	18
6	·08	21	·08	18	·09	21	·04	11	·10	19	·06	11	·05	11	·10	27	·06	20	·07	18
7	·08	21	·08	17	·09	21	·04	11	·10	19	·06	11	·05	10	·10	27	·05	19	·07	17
8	·08	21	·08	16	·09	20	·04	10	·10	19	·06	11	·05	9	·10	27	·05	18	·07	17
9	·08	21	·06	15	·09	20	·04	9	·10	19	·06	11	·04	8	·10	27	·05	19	·07	17
10	·08	21	·06	14	·09	19	·04	9	·10	19	·05	10	·03	7	·10	27	·05	18	·07	16
11	·08	21	·07	15	·09	18	·04	9	·10	19	·05	10	·03	7	·11	28	·05	18	·07	16
12	·08	20	·07	15	·09	19	·04	9	·10	19	·05	9	·03	7	·11	28	·06	19	·07	16
13	·08	19	·07	15	·09	20	·04	9	·11	20	·05	8	·04	8	·11	27	·06	20	·07	16
14	·08	18	·07	14	·09	21	·04	9	·09	20	·05	8	·04	8	·11	27	·06	19	·07	16
15	·07	17	·07	15	·09	22	·04	9	·08	20	·05	8	·04	9	·11	26	·05	18	·07	16
16	·07	16	·07	15	·09	23	·04	9	·08	20	·06	9	·04	10	·11	26	·05	17	·07	16
17	·07	15	·08	16	·09	24	·04	9	·08	20	·06	10	·07	11	·10	25	·05	17	·07	16
18	·07	15	·08	17	·09	24	·04	9	·08	20	·06	10	·07	12	·10	25	·04	16	·07	16
19	·06	14	·08	17	·10	23	·04	9	·08	20	·06	10	·07	13	·10	25	·04	17	·07	16
20	·05	13	·08	17	·10	22	·04	8	·07	19	·06	10	·08	13	·10	24	·04	17	·07	16
21	·04	12	·07	17	·08	21	·04	9	·07	19	·06	10	·08	14	·10	24	·04	17	·06	16
22	·03	11	·07	16	·08	21	·04	8	·07	19	·04	9	·09	15	·09	24	·04	16	·06	15
23	·03	10	·07	15	·08	21	·04	8	·07	19	·04	8	·09	15	·09	22	·04	16	·06	15
24	·03	9	·07	15	·08	20	·04	8	·07	19	·03	8	·09	15	·09	22	·04	17	·06	15
25	·03	9	·07	15	·08	20	·04	8	·07	19	·03	7	·09	15	·09	22	·04	17	·06	15
26	·03	8	·07	15	·08	20	·04	8	·07	19	·01	6	·09	15	·09	21	·04	17	·06	14
27	·03	7	·07	16	·08	20	·04	8	·07	18	·01	6	·09	16	·09	22	·04	17	·06	14
28	·05	8	·07	16	·08	20	·04	8	·06	17	·01	6	·09	17	·08	21	·04	16	·06	14
29	·06	8	·07	16	·08	20	·04	8	·06	16	·01	6	·09	17	·08	20	·05	17	·06	14
30	·07	9	·09	17	·07	19	·03	7	·06	15	·01	6	·09	18	·09	21	·06	18	·06	14

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TABLE showing the mean TEMPERATURE for the six weeks previous to each day from JANUARY 11th to 31st, in the years 1865 to 1873.

	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	Mean.
11	37·4	41·3	39·5	35·1	44·6	37·9	31·6	38·0	42·7	38·7
12	37·5	41·1	39·4	34·8	44·6	38·0	31·5	38·1	42·8	38·6
13	37·5	41·0	39·1	35·1	44·4	38·2	31·3	38·4	42·9	38·7
14	37·3	41·1	38·4	35·5	44·2	38·4	31·4	38·6	43·0	38·7
15	37·1	41·1	37·6	35 9	44·1	38.7	31·5	38·7	43·3	38·7
16	36·8	41·1	37·0	36·1	43·8	39·0	31·6	38·9	43·7	38·7
17	36·4	41·1	36·4	36·5	43·7	39·2	31·5	39·1	43·6	38·6
18	36·2	40·9	35·9	36·8	43·4	39·3	31·6	39·4	43·5	38·6
19	35·9	40·9	35·7	37·1	43·2	39·1	31·8	39·7	43·5	38·5
20	35·8	41·0	35·4	37·3	43·1	39·0	31·9	39·9	43·3	38·5
21	35·4	41·0	35·0	37·4	42·8	38·7	32·0	39·9	43·3	38·4
22	35·0	41·1	34·9	37·2	42·4	38·5	31·9	40·1	43·3	38·3
23	34·7	41·3	34·8	36·8	42·2	38·3	31·8	40·2	43·5	38·2
24	34·4	41·4	34·8	36·6	41·9	38·1	31·5	40·2	43·4	38·0
25	34·1	41·4	34·9	36·6	41·6	37·9	30·9	40·2	43·3	37·9
26	34·1	41·4	34·8	36·3	41·3	37·5	30·5	40·2	43·1	37·7
27	34·1	41·5	34·9	36·1	41·2	37·2	30·2	40·2	43·0	37·6
28	34·0	41·5	35·0	36·0	41·2	36·8	30·0	40·3	42·8	37·5
29	33·9	41·6	34·9	36·1	41·2	36·3	29·7	40·2	42·5	37·4
30	34·0	41·5	34·9	36·2	41·2	36·0	29·3	40·2	42·4	37·3
31	33·9	41·5	35·1	36·6	41·4	36·1	29·0	40·3	42·3	37·4

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TABLE showing the mean TEMPERATURE for the six weeks previous to each day from FEBRUARY 1st to 28th, in the years 1865 to 1873.

	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	Mean.
1	33°9	41°5	35°3	36°8	41°4	38°1	29°1	40°5	41°9	37°4
2	34·1	41·7	35·4	36·7	41·4	36·2	29·3	40·6	41·3	37·4
3	34·3	41·7	35·2	36·7	41·4	36·4	29·8	40·7	40·8	37·4
4	34·5	41·8	35·3	36·6	41·6	36·6	30·4	40·8	40·5	37·6
5	34·6	41·7	35·3	36·6	41·9	36·9	31·1	40·9	40·2	37·7
6	34·8	41·8	35·2	36·7	42·0	37·2	31·5	41·0	39·8	37·8
7	35·1	42·1	35·1	36·9	42 0	37·6	32·1	41·0	39·6	37·9
8	35·2	42·1	35·2	37·1	42·2	37·9	32·6	41·1	39·3	38·1
9	35·0	42·1	35·1	37·2	42·3	37·8	32·9	41·2	38·9	38·1
10	34·8	42·2	35·4	37·4	42·6	37·5	33·4	41·2	38·7	38·1
11	34·7	42·1	35·6	37·7	42·8	37·1	33·6	41·4	38·5	38·2
12	34·5	42·2	36·0	37·9	43·0	36·6	34·0	41·5	38·3	38·2
13	34·4	42·0	36·6	38·2	42·9	36·1	34·4	41·6	38·2	38·3
14	34·3	41·8	37·1	38·7	43·0	35·7	34·6	41·7	38·0	38·3
15	33·9	41·6	38·0	39·0	43·1	35·3	35·0	41·7	37·9	38·4
16	33·6	41·6	38·6	39·1	43·1	35·0	35·3	41·6	37·7	38·4
17	33·4	41·6	38·9	39·3	43·2	34·7	35·5	41·7	37·4	38·4
18	33·3	41·4	38·8	39·6	43·3	34·4	35·7	41.8	37·1	38·4
19	33·2	41·1	38·8	39·7	43·0	34·1	36 0	41·9	36·8	38·3
20	33·0	41·0	38·9	39·9	42·8	34·0	36·3	42·0	36·4	38·3
21	32·6	40·9	39·1	40·3	42·7	34·0	36·6	42·2	35·9	38·3
22	32·6	41·0	39·4	40·6	42·6	34·0	36·8	42·1	35·6	38·3
23	32·6	41·3	39·9	40·6	42·4	34·0	37·2	42·2	35·3	38·4
24	32·8	41·3	40·4	40·7	42·4	34·0	37·6	42·3	34·8	38·5
25	32·9	41·1	40·9	40·8	42·3	33·9	37·7	42·5	34·5	38·5
26	32·9	40·8	41·4	40·8	42·4	33·8	37·8	42·7	34·5	38·6
27	33·0	40·6	41·7	40·8	42·4	33·7	38·2	42·8	34·3	38·6
28	33·3	40·2	41·9	40·8	42·2	33·7	38·4	42·7	34·1	38 6
	...	...	...	40·8	...	...	...	42·9		

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TABLE showing the mean TEMPERATURE for the six weeks previous to each day from MARCH 1st to 31st, in the years 1865 to 1873.

	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	Mean.
1	38°6	39°7	42°1	40°7	42°3	34°0	38°6	43°2	34°1	38°7
2	38·8	39·3	42·2	40·8	42·3	34·4	38·7	43·5	34·1	38·8
3	34·0	38·9	42·4	41·1	42·2	34·8	39·0	44·0	34·4	39·0
4	34·2	38·7	42·6	41·4	42·3	34·9	39·2	44·1	34·6	39·1
5	34·4	38·3	42·9	41·7	42·5	35·0	39·5	44·3	34·8	39·3
6	34·6	38·1	42·6	41·9	42·7	35·1	39·8	44·4	34·9	39·3
7	34·8	37·9	42·2	41·9	42·8	35·1	40·1	44·5	35·0	39·4
8	34·9	37·8	41·9	42·0	42·9	35·2	40·4	44·7	35·3	39·5
9	35·0	37·9	41·7	41·9	42·8	35·5	40·7	44·7	35·4	39·5
10	35·1	37·9	41·4	41·8	42·7	35·8	41·1	44·7	35·4	39·5
11	35·3	37·8	41·1	41·9	42·4	36·2	41·6	44·7	35·6	39·6
12	35·6	37·7	40·7	42·0	42·1	36·3	42·1	44·6	35·8	39·7
13	35·6	37·7	40·3	42·1	41·9	36·2	42·4	44·5	35·9	39·6
14	35·6	37·4	40·1	42·0	41·5	35·9	42·6	44·4	35·9	39·5
15	35·5	37·1	39·8	42·0	41·1	35·8	42·7	44·4	36·0	39·4
16	35·4	37·0	39·4	42·1	40·9	36·0	42·8	44·5	36·2	39·4
17	35·2	37·0	39·2	42·2	40·7	36·1	42·7	44·6	36·4	39·3
18	35·2	37·0	38·9	42·1	40·5	36·2	42·8	44·6	36·6	39·3
19	35·2	36·9	38·6	42·1	40·3	36·1	42·7	44·5	36·6	39·2
20	35·0	36·7	38·3	42·0	40·1	36·0	42·7	44·3	36·7	39·1
21	34·7	36·4	38·1	42·3	39·8	36·1	42·6	44·0	36·7	39·0
22	34·6	36·3	37·8	42·6	39·6	36·2	42·5	43·7	36·8	38·5
23	34·7	36·1	37·7	42·6	39·3	36·3	42·7	43·3	37·0	38·9
24	34·8	36·1	37·6	42·3	39·1	36·6	42·9	43·1	37·2	38·9
25	34·9	36·2	37·8	42·3	38·8	36·8	43·4	43·0	37·6	39·0
26	35·1	36·2	37·8	42·4	38·8	37·1	43·9	42·6	37·8	39·1
27	35·2	36·6	37·8	42·5	38·6	37·3	44·0	42·5	38·0	39·2
28	35·4	36·9	37·6	42·6	38·4	37·4	43·8	42·6	38·2	39·2
29	35·6	37·2	37·5	42·5	38·1	37·5	43·7	43·0	38·4	39·3
30	35·9	37·4	37·4	42·5	37·9	37·6	43·6	43·2	38·7	39·4
31	36·1	37·6	37·2	42·6	37·7	37·8	43·6	43·3	38·9	39·4

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TABLE showing the mean TEMPERATURE for the six weeks previous to each day from APRIL 1st to 30th, in the years 1865 to 1873.

	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	Mean.
1	36·3	37·8	37·1	42·6	37·5	38·0	43·6	43·5	39·2	39·5
2	36·4	38·0	37·3	42·7	37·5	38·1	43·5	43·5	39·5	39·6
3	36·7	38·2	37·3	42·7	37·6	38·3	43·5	43·5	39·7	39·7
4	37·0	38·3	37·3	42·7	37·5	38·4	43·6	43·5	40·1	39·8
5	37·1	38·4	37·3	42·8	37·7	38 6	43·7	43·4	40·4	39·9
6	37·3	38·5	37 4	42·9	37·9	38·8	43·7	43·3	40·6	40·0
7	37·5	38·6	37·5	43·0	38·2	38·9	43·6	43·1	40·9	40·1
8	37·8	38·8	37·7	42·8	38·5	39·2	43·6	43·2	41·0	40·3
9	38·2	38·9	37·8	42·6	38·5	39·3	43·6	43·4	40·9	40·4
10	38·5	39·1	37·9	42·5	38·7	39·3	43·5	43·5	40·9	40·4
11	38·7	39·5	38·2	42·3	39·2	39·2	43·3	43·6	41·1	40·6
12	38·9	40·0	38·4	42·1	39·5	39·1	43·6	43·6	41·1	40·7
13	39·1	40·5	38·7	42 0	39·9	39·1	43·9	43·6	41·2	40·9
14	39·3	40·9	39·0	41·9	40·5	39·2	44·0	43·5	41·3	41·1
15	39·6	41·3	39·3	41·8	40·8	39·5	44·1	43·5	41·6	41·3
16	39·9	41·7	39·5	42·0	40·8	39·8	44·2	43·4	41·9	41·5
17	40·4	42·1	39·9	42·2	41·0	40·2	44·2	43·4	42·1	41·7
18	40·9	42·4	40·3	42·3	41·2	40·5	44·3	43·2	42·3	41·9
19	41·2	42·6	40·8	42·5	41·3	40·9	44·5	43·0	42·4	42·1
20	41·6	42·9	41·2	42·7	41·6	41·3	44·6	42·8	42·5	42·4
21	42·1	43·2	41·4	42·9	42·0	41·5	44·7	42·8	42·8	42·6
22	42·5	43·4	41·6	43·1	42·3	41·7	44 8	42·9	42·8	42·8
23	43·0	43·5	42·1	43·3	42 7	41·9	44·8	42·9	42·9	43·0
24	43·4	43·8	42·6	43·3	43·1	42·3	44·8	43·1	42·9	43·3
25	43·7	44·3	43·0	43·3	43·6	42·9	45·0	43·3	43·0	43·6
26	44·2	44·7	43·3	43·4	44 0	43·1	45·4	43·3	43·0	43·8
27	44·7	45·1	43·8	43·4	44·5	43·0	45·7	43·4	43·1	44·1
28	45·3	45·4	44·1	43·4	45·0	42·7	46·1	43·5	43·2	44·3
29	45·6	45·3	44·5	43·7	45·1	42 6	46·2	43·6	43·5	44·5
30	45·8	45·3	45·0	44·0	45·2	42·8	46·3	43·7	43·6	44·6

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TABLE showing the mean TEMPERATURE for the six weeks previous to each day, from MAY 1st to 31st, in the years 1865 to 1873.

	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	Mean.
1	46°2	45°2	45°4	44°4	45°3	43°0	46°3	44°0	44°1	44°9
2	46·7	45·3	45·7	44·4	45·5	42·9	46·4	44·6	44·4	45·1
3	47·1	45·4	46·2	44·7	45·7	42·7	46·5	45·0	44·6	45·3
4	47·5	45·4	46·5	44 9	45·9	42·9	46·3	45·3	44·6	45·5
5	48·1	45·4	46·8	45·2	46·2	43·1	46·2	45·7	44·7	45·7
6	48·6	45·4	47·1	45·5	46·5	43·5	46·3	45·9	44·7	45·9
7	48·9	45·6	47·5	45·6	46·8	43·8	46·3	46·3	44·6	46·2
8	49·4	45·5	47·9	45·7	47·2	44·2	46·4	46·4	44·6	46·4
9	49·8	45·5	48·2	46·0	47·5	44·4	46·6	46·3	44·6	46·5
10	50·1	45·5	48·6	46·5	48·0	44·6	46·8	46·1	44·6	46·8
11	50·2	45·5	48·9	46·8	48·3	45·0	46·9	45·8	44·7	46 9
12	50·4	45·5	49·2	47·0	48·5	45·3	46·9	45·6	45·0	47·0
13	50·5	45·6	49·2	47·2	48·7	45·5	46·8	45·5	45·1	47·1
14	50·8	45·8	49·1	47·6	48·9	45·8	46·8	45·8	45·1	47·3
15	50·8	45·9	49·0	47·8	49·1	46·0	46·8	45·8	45·2	47·4
16	51·0	46·1	48·8	48 1	49·3	46·4	46·9	46·1	45·2	47·5
17	51·2	46·3	48·8	48·4	49·5	46·5	46·9	46·1	45·2	47·7
18	51·1	46·3	48·8	48·6	49·6	46·9	47·0	46·1	45·3	47·7
19	51·1	46·6	48·9	49·0	49·5	47·2	47·3	46·1	45·4	47·9
20	51·1	46·8	49·0	49·4	49·4	47·5	47·5	45·9	45·5	48·0
21	51·3	47·1	49·0	49·8	49·3	48·0	47·8	46·0	45·6	48·2
22	51·4	47·3	48·9	50·2	49·3	48·4	48·1	46·0	45·9	48·4
23	51·6	47·4	48·7	50·5	49·1	48·5	48·5	45·8	46·2	48·5
24	51·6	47·4	48·6	50·9	48·9	48·7	48·7	45·6	46·4	48·5
25	51·7	47·3	48·5	51·3	48·9	48·8	48·8	45·7	46·5	48·6
26	51·9	47·4	48·7	51·6	48·8	48 8	48·8	45·9	46·6	48·7
27	52·2	47·6	48·8	51·9	48·7	48·9	48·8	46·0	46·5	48·8
28	52·3	47·6	49 0	52·0	48·7	49·0	48·8	46·2	46·4	48·9
29	52·3	47·6	49·2	52·2	48·6	49·1	49·0	46·5	46·4	49·0
30	52·3	47·6	49·3	52·5	48·6	49·3	49·1	46·8	46·5	49·1
31	52·5	47·8	49·4	52·7	48·8	49·3	49·3	47·1	46·6	49·3

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TABLE showing the mean TEMPERATURE for the six weeks previous to each day from JUNE 1st to 30th, in the years 1865 to 1873.

	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	Mean.
1	52°6	48°1	49°5	52°9	48°7	49°1	49°6	47°4	46°6	49°4
2	52·6	48·3	50·0	53·0	48·8	49·2	49·5	47·8	46·7	49·5
3	52·6	48·7	50·2	53·0	49·0	49·5	49·3	47·9	47·0	49·7
4	52·7	49·0	50·2	53·1	48·9	49·8	49·2	48·0	47·4	49·8
5	52·9	49·1	50·2	53·2	48·9	50·1	49·3	48·0	47·9	50·0
6	53·1	49·2	50·4	53·5	49·0	50·1	49·4	48·0	48·3	50·1
7	53·2	49·3	50·6	53·7	49·4	50·3	49·4	47·9	48·6	50·3
8	53·3	49·3	50·7	53·8	49·4	50·8	49·3	47·7	48·9	50·4
9	53·5	49·4	51·0	54·0	49·3	51·3	49·2	47·7	49·2	50·5
10	53·8	50·0	51·2	54·0	49·5	51·5	49·2	47·8	49·3	50·7
11	54·0	50·4	51·6	53·9	49·5	51·7	49·2	47·8	49·5	50·8
12	54·2	50·8	51·8	54·1	49·7	52·0	49·4	47·9	49·4	51·0
13	54·4	51·2	52·0	54·3	49·9	52·5	49·6	48·0	49·6	51·3
14	54·6	51·5	52·0	54·4	49·9	52·9	49·8	48·2	49·7	51·4
15	54·9	51·9	51·9	54·5	50·0	53·3	50·2	48·6	50·0	51·7
16	54·9	52·1	51·7	54·8	50·1	53·9	50·5	48·9	50·2	51·9
17	55·0	52·1	51·5	55·1	50·0	54·1	50·6	49·3	50·5	52·0
18	55·2	52·1	51·3	55·4	49·8	54·3	50·7	49·8	50·9	52·2
19	55·2	52·3	51·3	55·6	49·9	54·7	50·8	50·3	51·2	52·4
20	55·3	52·4	51·2	55·8	50·0	55·1	51·1	50·6	51·4	52·5
21	55·7	52·6	51·2	56·1	49·8	55·6	51·3	50·9	51·8	52·8
22	56·2	52·8	51·1	56·2	49·9	56·0	51·5	51·3	52·0	53·0
23	56·6	53·1	51·2	56·2	50·1	56·3	51·7	51·6	52·0	53·2
24	56·9	53·5	51·5	56·3	50·2	56·3	51·9	52·0	52·1	53·4
25	57·1	53·7	51·8	56·4	50·4	56·4	52·1	52·2	52·4	53·6
26	57·3	54·2	52·1	56·5	50·5	56·5	52·2	52·4	52·7	53·8
27	57·7	54·8	52 5	56·6	50·8	56·6	52·2	52·5	53·0	54·1
28	58·0	55·2	52·8	56·8	50·9	56·7	52·6	52·7	53·2	54·3
29	58·0	55·5	53·0	56·7	51·0	56·7	52·8	53·1	53·5	54·5
30	58·2	55·8	53·1	56·5	51·1	56·7	52·9	53·4	53·8	54·6

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NOTES ON THE INSTRUMENTS.

THE instruments used in making the observations were made by *Negretti* and *Zambra*, and compared with the standards in the possession of Mr. Glaisher. They are as follows:—Barometer, a standard on Fortin's principle, brass mounted, suspended in the Rev. T. A. Preston's study, and is 456 feet above sea-level. Dry and wet Bulb Thermometers; maximum, Negretti's patent, and minimum on Rutherford's construction. These thermometers are placed on a stand, which consists of a board attached to two uprights, fastened to a cross-piece in the ground; the stand is protected at the back by a double sloping board, and on the three other sides by Venetian blinds. The instruments face the North-east, and are 13 feet distant from the wall of a house on the South-south-east, and 16 feet from some trees, about 28 feet high, on the North. The dry and wet bulb thermometers are about 3 feet, the maximum 3 feet 10 inches, and the minimum 3 feet 7 inches, above the ground. The Maximum Thermometer in the sun's rays, is an ordinary maximum thermometer, with blackened bulb *in vacuo*, and is placed on the ground inside the fencing protecting the rain-gauges, about 45 feet East-North-east of the thermometer stand, and about 40 feet South of the Chapel. The Minimum Thermometer for terrestrial radiation, is an ordinary spirit thermometer on Rutherford's construction, which is placed on the ground near the solar radiation thermometer, with its bulb freely exposed to the sky. This thermometer was sent to London to be compared in December, 1870, but was broken on the way; and a new instrument was obtained on January 2nd, 1871. In November, 1872, the readings of this thermometer were found to be too low, and upon the instrument being examined, a portion of the spirit, to the amount of about 10°, was noticed in the upper part of the tube. It is believed that this had been accumulating for some time, consequently the readings have been omitted since July, 1872. Another new thermometer was obtained on December 3rd. The Rain-gauge is 5 inches in diameter, and is placed on a slope so that the top of the funnel is on a level with the surface of the ground.

The foregoing tables give for each day of the year, the mean reading of the barometer, the maximum, minimum and mean temperature, the maximum in the sun's rays, the lowest on the grass, the direction of the wind, the amount of cloud, and the rainfall.

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BAROMETER.

The barometer was read at 9 a.m., and 3 p.m.; the mean of these readings has been taken, corrected for diurnal range, and reduced to 32°. As this instrument is 456 feet above the level of the sea, the following table has been compiled in order to facilitate the reduction of the readings to sea-level.

Reading of Barometer.	Temperature of the Air.				
	30°	40°	50°	60°	70°
in.	in.	in.	in.	in.	in.
28·0	+0·487	+0·477	+0·468	+0·459	+0·451
28·5	·496	·486	·476	·467	·458
29·0	·504	·494	·485	·476	·467
29·5	·513	·503	·494	·484	·475
30·0	·522	·512	·520	·492	·483
30·5	·531	·521	·511	·500	·491

TEMPERATURE.

Columns 3 and 4 give the maximum and minimum Temperatures during the day as observed from the self-registering instruments. The mean Temperature (column 5) is deduced from the mean of the readings of the Dry Bulb Thermometer at 9 a.m. and 3 p.m., corrected for diurnal range, and the mean of the maximum and minimum, also corrected.

The maximum Temperature in the sun's rays is given in column 6.

The lowest Temperature on the grass will be found in column 7.

WIND.

The direction of the Wind, in columns 8 and 9, is that observed from a vane at 9 a.m. and 3 p.m.

CLOUD.

The amount of Cloud given in column 10 is the mean of two observations, viz.:—at 9 a.m., and 3 p.m. A cloudless sky is represented by 0, and an over-cast sky by 10.

RAIN.

The rain was measured every morning at 9 a.m., and is entered as belonging to the previous day.

NOTE.—In every other instance the civil day has been adhered to.

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NINETEENTH HALF-YEARLY

REPORT

OF THE

MARLBOROUGH COLLEGE

Natural History Society,

(FOUNDED APRIL 9TH, 1864,)

FOR THE

HALF-YEAR,

ENDING MIDSUMMER, 1874.

"Tum mihi Naturæ libeat perdiscere mores:
Quis Deus hanc mendi temperet arte domum."

MARLBOROUGH:
PRINTED BY C. PERKINS, TIMES OFFICE,
1874.

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PREFACE.

THIS Report will be found to contain an entirely new feature, in the Tables of Weights and Measures of the whole School. At the request of F. GALTON, Esq., F.R.S., President of the Anthropological Institute, Dr. FERGUS undertook to provide certain statistics relative to the weights and dimensions of every member of the School, the results being classified according to age. In addition to those supplied to Mr. GALTON, Dr. FERGUS took some other details which he has kindly worked up for the Report with very considerable labour, and the Tables and Remarks thus supplied will probably form one of the most interesting portions of any Report hitherto published by the Society.

With regard to the re-organization of the Society, described in our last Report, the two general meetings every term have proved an undoubted success, the attendance both of Members of the Society and of Visitors from the School and neighbourhood having been most encouraging. We cannot, however, help remarking that the frequent shifting of specimens from the Museum (where they are entirely hidden from sight) to the Bradleian for the purposes of exhibition at these meetings, can hardly fail in the long run to be very injurious to the Society's collections, and it is much to be regretted that the Society has no adequate space for permanently exhibiting its treasures without the necessity of their being constantly handled. The success of the Sectional arrangement is necessarily very varied, depending as it does upon the individual work of the Members. We cannot too strongly impress upon

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the Society the absolute necessity of supplementing the papers and discussions at the Fortnightly Meetings by private study and field work. Unless Members of the Sections have found out from their own attempts what the points are on which they wish to be especially enlightened, they must necessarily carry away a very vague and imperfect impression of the information afforded in the papers, and probably have missed the essential point which a little private study on their own part would have enabled them to understand.

The new Physicial Section has hitherto proved a great attraction, and we hope now that it has been so successfully started it will prove a useful and permanent institution.

It only remains for us to tender our best thanks to those who have kindly contributed to the Museum. Though the number of Donors has been small, the contributions have been very valuable, and have deservedly attracted great interest at our Meetings. Complete lists of the donations of H. C. SPRY, ESQ., (O.M.), and C. W. EVERARD, ESQ., (O.M.), have been inserted in the Report, and in addition we have to thank H. C. CHARLEWOOD, ESQ., (O.M.), for a very complete skeleton of Ichthyosaurus, and Rev. J. M. Fuller for continuing to send us the numbers of "*Science Gossip*."

We cannot conclude without returning our warmest thanks to the Members of the Common Room for their liberal aid in helping us to meet the expenses of the Conversazione, and to all who by their exertions and the loan of specimens tended to make it the success which it proved.

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MEMBERS OF THE SOCIETY.

President :

Rev. T. A. Preston.

Secretary :

G. A. Lefroy.

Librarian :

R. W. Doyne.

Committee (Lent Term).

The ex-officio Members
Rev. A. Babington
H. S. Philpot
J. N. Atkinson

Midsummer Term :

The ex-officio Members
C. W. Bourne, Esq.
J. N. Atkinson
J. C. Brown

Honorary Members :

Rev. G. G. Bradley, D.D.
F. E. Thompson, Esq.
W. E. Mullins, Esq.
C. M. Bull, Esq.
Rev. J. F. Bright
Rev. J. Sowerby
Rev. C. W. Tayler
Rev. A. Babington
W. Fergus, Esq., M.D.
S. B. Dixon, Esq., F.G.S.
F. Storr, Esq.
W. H. Macdonald, Esq.
J. F. Duthie, Esq.
G. H. Dawson, Esq.
Rev. A. C. Almack
E. F. im Thurn, Esq.
G. K. Mills, Esq.
W. Mansell, Esq.
Rev. G. W. DeLisle
H. A. Evans, Esq.
Rev. J. W. Mills
E. C. Sewell, Esq.
J. Walker, Esq., M.D.
D. E. Leighton, Esq.
W. W. Fowler, Esq.
M. H. Smith, Esq.
J. F. Cornish, Esq.
C. Sankey, Esq.
A. H. Beesly, Esq.
F. E. Hulme, Esq., F.L.S. F.S.A.
Capt. H. O. Bateman
Rev. C. E. Thorpe
Rev. J. S. Thomas
C. A. Sladen, Esq.
G. E. Manisty, Esq.
W. Koch, Esq.
Rev. F. W. Farrar, D.D. F.R.S.
W. P. Sellick, Esq.
H. C. Spry, Esq.
W. D. Smith, Esq.
G. F. Rodwell, Esq.
W. D. Fenning, Esq.
R. E. Price, Esq.
Capt. R. B. Reed.
H. J. Verrall, Esq.
H. M. Hamilton, Esq.
E. Meyrick, Esq.
C. W. Bourne, Esq.
H. D. Drury, Esq.
F. L. Barnwell, Esq

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Members:

Lent Term—1874.

R. W. Doyne, *E.*
A. P. Macgregor, *A.*
E. Hunter, *F.*
N. Whiting, *E.*
H. W. Thatcher, *C.*
W. M. H. Milner *C. E.*
W. H. Williams, *D. F.*
A. V. White, *E.*
A. W. Flux, *C.*
T. G. Balfour, *F.*
W. M. Grove, *F.*
A. E. Garrod, *D.*
R. A. Farrar, *B.*
A. W. Taylor, *F.*
C. Colville, *B.*
N. Manders, *D.*
F. G. Heaven, *F.*
D. E. Olivier, *C.*
A. H. Thurnam, *E.*
W. G. Busk, *A.*
C. E. Fox, *F.*
G. A. Lefroy, *C.*
H. S. Philpot, *C.*
C. E. Blackett-Ord, *A.*
W. S. Robinson, *A.*
J. C. Brown, *E.*
J. N. Atkinson, *F.*
R. Armitage, *E.*
J. B. Kite, *C.*
H. W. How, *B.*
R. Longman, *F.*
D. H. Davies, *E.*
G. E. Grogan, *E.*
J. Adams, *C.*
E. W. Brown, *F.*
J. W. G. Kealy, *E.*
H. Thompson, *C.*

Associates:

A. P. Wickham, *A. F.*
A. C. Sim.

A. Anthropological Section.
B. Archæological „
C. Botanical „
D. Entomological „
E. Geological „
F. Ornithological „
G. Physical „

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Members:

Midsummer Term—1874.

R. W. Doyne, *E.*
A. P. MacGregor, *G.*
E. Hunter, *F.*
N. Whiting, *E. G.*
H. W. Thatcher, *C. G.*
W. M. H. Milner, *C.*
A. V. White, *E.*
A. W. Flux, *C.*
T. G. Balfour, *F.*
W. M. Grove, *F.*
A. E. Garrod, *G.*
R. A. Farrar, *B. G.*
N. Manders, *D.*
F. G. Heaven, *C. G.*
D. E. Olivier, *C. G.*
C. E. Fox, *F.*
G. A. Lefroy, *C.*
H. S. Philpot, *C.*
C. E. Blackett-Ord, *E.*
W. S. Robinson, *E.*
J. C. Brown, *E.*
J. N. Atkinson, *F.*
R. Armitage, *E.*
J. B. Kite, *C.*
H. W. How, *G.*
D. H. Davies, *C. G.*
J. Adams, *C. G.*
E. W. Brown, *F.*
J. W. G. Kealy, *E.*
H. Thompson, *C. G.*
J. H. C. Dalton, *D.*
A. C. Lavers, *F.*
E. P. Martin, *F.*
A. E. Townsend, *F.*
S. B. Pemberton, *G.*
W. L. Mackintosh, *E.*
W. Giles, *F.*
J. P. Grant, *D.*
E. Marshall, *F.*
G. Mackintosh
A. S. Bright, *G.*
C. B. Penlington, *G.*
C. R. Draper, *F.*
J. D. Rogers, *G.*
J. M. L. Mould, *G.*
C. F. Johnson
F. S. Hockin, *G.*
E. F. Newman, *G.*
H. R. Armstrong, *G.*
H. E. Corbett, *E.*
C. F. Dixon, *F.*
G. R. Hume, *G.*
W. G. O. Cooper, *E.*
G. Callender, *E.*
L. F. Paul, *F.*
K. W. Murray, *F.*
A. J. Burness, *G.*
J. Ll. Dove, *G.*
C. V. Hume, *G.*
C. F. Johnson, *G.*
H. O. Yeatman, *G.*

Associates:

A. P. Wickham, *A. F.*
A. C. Sim

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RULES.

1.—That this Society be called the Marlborough College Natural History Society.

Constitution.

2.—That the Society consist of Members, Honorary Members, and Associates.

Officers.

3.—That the Officers of the Society consist of a President, Secretary, Treasurer, Librarian, and Curator.

Election of Officers.

4.—That the President have the absolute power of nominating the Secretary.

5.—That those Members of the Committee, who are not ex-officio Members, be elected terminally, and that the retiring Members be eligible for re-election.

6.—That the same rule apply to the Treasurer, Librarian, and Curator.

7.—That each candidate for election give in his name to the President, any time before the day of election.

8.—That all canvassing for votes by a Candidate, or by his friends with his knowledge, shall at once disqualify him for any election that term.

9.—That any Member canvassing for votes for a Candidate, or for a new rule, forfeit the right to vote on any occasion during that term.

10.—That the election of officers of the Society take place near the end of the term, but that they do not come into office till the beginning of the next term.

11.—That on the occurrence of any election, each Member of the Committee have double the number of votes of any other Member of the Society.

12.—That in the event of a vacancy occurring in the Committee or any other office to which Members are elected at the beginning of each term, the vacancy be filled up by the Committee.

13.—That eight Honorary Members have the power of debarring a candidate from standing for any office.

Management.

14.—That the affairs of the Society be conducted by a Committee, consisting of the President, Secretary, Treasurer, and three other Members of the Society, to be elected from and by Members of the Society; three of whom shall form a Quorum.

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President.

15.—That in case of an equality of votes, the President shall have a double or casting vote.

16.—That in the absence of the President, the Committee be empowered to request any Member of the Society to take the chair.

Secretary.

17.—That the duties of the Secretary be to keep a list of all the Members of the Society, and of all former members and Benefactors who may wish to receive the Reports of the Society; to summon meetings (when necessary) of the Society; to keep a detailed report of the proceedings, as well as lists of Members and Visitors present at each meeting, and generally to act under the direction of the Committee in all matters connected with the welfare of the Society.

18.—That in the absence of the Secretary from any meeting of the Society, minutes of the proceedings be taken by a Member of the Committee, appointed by the President.

Librarian,

19.—That the duties of the Librarian be to keep a catalogue of the Library, with the names of the Donors, and to see that the Library Regulations are carried into effect.

Curator.

20.—That the Curator be responsible for the order of the Museum, and when necessary assist the Secretary in the distribution of the Reports of the Society.

Library.

21.—That any Member of the Society be at liberty to consult any of the books belonging to the Society, but that only certain volumes, to be decided on by the Committee, be allowed to be taken from the room.

22.—That if any member wishes to take a volume from the Museum, he shall give his name, and the name of the book, to the Librarian, who shall enter them in the book kept for the purpose.

23.—That every volume so taken out be returned by the end of the term, but that no book be kept more than one month.

24.—That if any volume be damaged, such damage shall be reported by the Librarian to the Committee, who shall decide upon any further proceeding in the matter.

Museum.

25.—That any member of the School, who is not a member of the Society, be allowed access to the Museum at such times as it is open to Members of the Society generally, provided he first obtain leave from the President, which leave shall be renewed every term, but may be taken away at any time, if the privileges be abused in any manner.

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26.—That members of the Society be permitted to use the Museum at such hours as the Committee shall appoint; but that in the afternoon it be used exclusively for the purposes of Natural History.

Botanical Garden.

27.—That the Garden be under complete control of the President, or of some person appointed by the President.

28.—That the Garden be open to Members of the Society at all times, and that each Member be allowed to introduce one visitor.

29.—That any Member on application to the President can have the charge of a bed.

30.—That no plants be put in without special leave from the President.

31.—That Members may keep any plants of their own in such places as the President shall appoint as long as the ground is not required.

32.—That the Society's flowers may not be picked.

33.—That Members may gather from their own plants but may not depute others to do so.

Field Days.

34.—That the Field Days be confined *entirely* to Members of the Society, and that the President appoint a day on which names must be given in.

35.—That any member, who has given in his name, must pay his share of the expenses, unless he is *unavoidably* prevented from going, in which case he must give notice at least three hours before the time of starting.

Members.

36.—That the election of new members rest entirely with the Committee.

37.—That every Member pay a terminal subscription of 2s., to be paid at the first meeting of the Society in that term.

38.—That if a member be elected after the commencement of the term, the amount of his subscription for that term shall be settled by the Committee.

39.—That Members have the right to be present, to state their opinions, and to vote at all general meetings of the Society; to introduce two visitors at all general meetings of the Society; to have personal access to the Museum, and to introduce a visitor at such times, as shall seem fit to the Committee.

40.—That members be considered as Probationary Members for the first term after their election.

Honorary Members.

41.—That Honorary Members have all the privileges of Members, except the power of introducing a Member of the School to the meetings of the Society.

42.—That Honorary Members pay 5s. a half-year, for which they shall be entitled to a copy of the Report.

43.—That Honorary Members may compound for all future subscriptions by the payment of a sum of two guineas.

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Associates.

44.—That Associates be confined to members of VIth and Upper Vth Forms; that they pay 1s. a term, and be entitled to the use of the Museum, and to attend the meetings of the Society whenever they think fit, but shall not be entitled to vote on any question, to introduce a visitor, or to take books out of the Museum.

Visitors.

45.—That on such occasions when the number of those who wish to be present as visitors at the general meetings of the Society is greater than the number of Members who attend, the President and Committee shall be empowered to admit three or more each, as shall seem fit.

Suspension of Members.

46.—That any Member be liable to be excluded from the Society by the Committee, if, in their opinion, he shall have failed to show sufficient energy in the working of the Society.

Sections.

47.—That the Society consist of sections to be formed for the more accurate study of the different branches of Natural History, and that every Member must belong to a Section.

48.—That the question of the number of Sections be left open for settlement at the beginning of each term.

49.—That no one may leave one Section for another during the term.

50.—That there shall be a definite number of Meetings of each Section during each Term, the number and days of meeting to be settled at a general meeting of the Society, to be held for that purpose at the beginning of each Term.

51.—That attendance of all members (except those of the VI. Form) be compulsory at all the meetings of any Section to which they belong.

52.—That the Sectional meetings be open to any other members of the Society; or of the School, on application to the Heads of the Sections.

53.—That the internal control of the proceedings at each Sectional meeting be entirely in the hands of the Head of that Section.

54.—That the Heads of Sections be appointed for each Term by the Committee.

Meetings.

55.—That there be two general Meetings of the Society each Term, exclusive of the general preliminary meeting.

New Rules.

56.—That any Member of the Society have power to propose any new rule or any alteration in an old one, provided the motion be seconded by another Member.

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LENT TERM.

GENERAL MEETING HELD FEBRUARY 3RD, 1874.

In accordance with the rules passed last Term, this was a meeting of the Society to settle the sections, &c., for the Term. Ten members were absent, two more had left the school, and one had not yet returned.

The following arrangements were made:—

Geological Section—Ten members, C. W. Bourne, Esq., head. Meetings in Museum on February 14th, 26th; March 14th, 28th.

Ornithological Section—Ten members, G. H. Dawson, Esq., head. Meetings in Museum on February 7th, 21st; March 7th, 21st.

Botanical Section—Seven members, Rev. T. A. Preston, head. Meetings in Museum on February 11th, 24th; March 10th, 24th.

Archæological Section—Three members, H. W. How, head. Meetings not settled.

Anthropological Section—Five members, Rev. A. Babington, head. Meetings not settled.

Entomological Section— A. E. Garrod, head. More members were expected to join, so nothing further was settled.

The General Meeting of the Society was fixed for February 28th, this with a Conversazione, to celebrate the tenth anniversary of the foundation of the Society, towards the end of the Term, would make up the two general meetings, which it had been decided should be held every Term.

MEETING HELD FEBRUARY 28TH, 1874.

At this first meeting under the new *regime*, which was held in the Bradleian, J. H. Freeman, Esq., F.C.S., kindly delivered a lecture on Spectrum Analysis.

The lecturer commenced by giving some happy illustrations of the relative distances between various planets and stars, among others pointing out that at a penny per mile, the journey from the earth to Sirius would cost many thousands of pounds. He then went on to the main subject of his

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lecture, and pointed out that two theories had been formed with regard to light, the one which was now universally accepted, being that light was transmitted in waves, like the succession of gradually extending ripples formed by throwing a stone into a pool of water. He then described the construction of the Spectroscope, and said that its development was mainly due to five persons—Newton, who first investigated the resolution of a beam of light; Wollaston, who transmitted the light through a narrow slit, instead of a round hole; Fraunhofer, who used a telescope to view the rays; Simms, who introduced the magnifying lens; and Kirchoff, who contrived the apparatus for comparing two spectra side by side.

The lecturer then exhibited a piece of lime burning in hydrogen gas, and pointed out how it was heated to a red heat; he then gradually supplied oxygen to the flame, till the red became red and orange, and by continually increasing the supply of oxygen, and thus raising the temperature, he at length produced an intense white light. Again, a piece of steel was heated in the hydrogen flame, and the supply of oxygen gradually increased, till the steel was melted, and the brilliant white light produced as before.

Mr. Freeman then went on to exhibit the distinctive colours produced by various metals in a gaseous state; of the numerous experiments, perhaps the most noticeable were the yellow tint of sodium and the violet of potassium. Remarking that sodium was almost universally prevalent in nature, the lecturer then showed the yellow colour, by touching the wick of his spirit lamp with one-tenth of a grain of carbonate of soda; this colour if viewed through the spectroscope, would give the bright line in the spectrum peculiar to sodium; if however the lime-light was brought into the field of view, this bright line would become a dark line; thus illustrating Kirchoff's famous discovery that gases and vapours, when relatively cool, absorb those very rays which they themselves give out in their incandescent state.

Mr. Freeman then exhibited diagrams of the sun's spots and chromosphere, especially intended to show the results of the eclipse expedition of 1870; explaining at the same time how the spectroscope assisted us in investigating the constitution of the sun. The protuberances rendered visible by an eclipse were stated to be composed of hydrogen, in combustion with some other gas at present unknown; and an explanation was given of the use of a spectroscope of several prisms, by which the glare of the sun is, as it were, diluted and diminished, and consequently the protuberances are rendered available for analysis.

It was next pointed out that, just as the length of a wave of sound is altered by rapid motion—for instance that the pitch of a railway whistle varies according to the rate at which the engine is travelling,—so is it with a wave of light. Hence the spectroscope not only enables us to determine

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the gaseous nature of the sun's envelope, but even to estimate in what direction, and with what rapidity these gases are moving.

With regard to planets, we find that the light emitted by them, is the reflected light of the sun, modified by its passage through their atmosphere; and consequently we can apply our analysis to investigate the constitution of this atmosphere. In like manner we may employ the spectroscope upon comets, and we shall usually find in their spectra, the three bands connected with carbon.

The lecturer concluded by certain remarks upon the production of heat by mechanical action, and the converse.

After a vote of thanks to Mr. Freeman, for his clear and well-arranged lecture, the proceedings terminated, as there was no time for exhibitions.

There were about a hundred persons present, including about thirty members of the Common Room and Visitors from the town.

CONVERSAZIONE, APRIL 7TH, 1874.

There was a large gathering of upwards of 200 Visitors on this occasion, when both the Bradleian and Adderley Library were arranged for the purpose.

In the former were displayed the principal objects of Natural History, and in the latter works of Art.

In the Bradleian among other objects the following were exhibited:

An analysis of a member of the School.

A collection of stuffed animals and birds.

A collection of swords, pottery, &c., from Ashanti, exhibited by Mr. James Gregory, Russell-street, Covent Garden.

Various Ethnological collections from the museum of the Society.

Models of flowers. Collection of plants in Flower from the neighbourhood of Marlborough, by F. E. Thompson, Esq. Potato products. Tea substitutes. Palm products. Hygrometric plants, &c.

Ozokerite, as found and manufactured; Iridescent Iron from Elba, together with cases of brilliant and polished minerals, exhibited by Mr. Gregory. Also a fossil in Sarsen Stone, a fine collection of fossil sponges, and various other objects lent by W. Cunnington, Esq., Devizes.

A Collection of Nests of Wasps and Hornets. Indian Insects, presented by Capt. R. B. Reed. Brazilian Insects. British Insects. Trap-door spiders, Scorpions, and Centipedes, exhibited by Mr. E W. Janson, Museum Street.

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The walls of the Bradleian were decorated with numerous drawings by F. E. Hulme, Esq., F.L.S. F.S.A. illustrative of Heraldry, Archæology, and Botany; while in one corner an appropriate shrine was formed for exhibiting a large Indian idol.

After a short lecture on the Moon, by C. W. Bourne, Esq, the majority of the visitors adjourned to the Adderley Library, in which there were many attractions. Amongst others may be enumerated four large compound microscopes exhibited by Mr. Ross of Wigmore Street; a collection of Bronzes and Antiques by Messrs. Nixon and Rhodes of Oxford Street; a valuable series of Greek, Roman and English gold and silver coins and medals, exhibited by Mr. Lincoln, New Oxford Street; a collection of Wedgewood medallions, lent by Miss Preston; a collection of coins and electrotypes, by Rev. F. W. Farrar, D.D.; and above all, in attractiveness as well as in value, a large case of Jewels and precious stones, African diamonds, Piping Bullfinches, &c., exhibited by Mr. Streeter, of New Bond Street.

The walls of the Library were adorned with a splendid collection of Prints, Photographs, and Chromolithographs, lent by W. Mansell, Esq., and G. F. Rodwell, Esq.

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MIDSUMMER TERM.

MEETING HELD MAY 8TH, 1874.

The following were elected Officers of the Society :—

Secretary—G. A. Lefroy.

Committee—C. W. Bourne, Esq., vice Rev. A. Babington, resigned—J. N. Atkinson, and J. C. Brown, vice H. S. Philpot resigned.

The office of Treasurer was revived, and G. H. Dawson, Esq., was elected to it; at the same time the Treasurer was made an *ex-officio* member of the Committee.

The following arrangements were made :—

Geological Section—10 Members. Meetings in the Museum on Wednesdays, May 13th, 27th, June 10th, 24th, July 8th, 22nd.

Ornithological Section—13 Members. Meetings in the Museum on Fridays, May 22nd, June 5th, 19th, July 3rd, 17th.

Botanical Section—11 Members. Meetings in the Museum on Tuesdays, May 12th, 26th, June 9th, 23rd, July 7th, 21st.

Entomological Section—3 Members. Meetings not fixed.

Physical Section—8 Members. Meetings not fixed.

Geological Section—W. L. Mackintosh, C. E. Blackett-Ord, W. S. Robinson, A. V. White, R. Armitage, J. C. Brown, J. R. Kealy, M. N. Whiting, R. W. Doyne, W. G. O. Cooper.

Ornithological Section—A. P. Wickham, J. N. Atkinson, A. E. Townsend, E. W. Brown, W. M. Grove, T. G. Balfour, C. E. Fox, E. S. Marshall, A. C. Lavers, W. Giles, E. Hunter, E. P. Martin, A. Longman.

Botanical Section—H. W. Thatcher, J. Adams, H. T. A. Thompson, D. E. Olivier, A. W. Flux, D. H. Davies, G. A. Lefroy, J. B. Kite, H. S. Philpot, W. M. H. Milner, F. G. Heaven.

Entomological Section—J. H. C. Dalton, N. Manders, J. P. Grant.

Physical Section—H. W. Thatcher, J. Adams, H. T. A. Thompson, D. E. Olivier, A. P. Macgregor, S. B. Pemberton, A. E. Garrod, R. W. Doyne.

Six Members were absent. F. L. Barnwell, Esq., was elected an Honorary Member.

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MEETING HELD MAY 29TH, 1874.

After a few introductory remarks from C. W. Bourne, Esq., who took the Chair in the absence of the President, G. F. Rodwell, Esq., gave a lecture upon Dr. Schliemann's recent discoveries upon the supposed site of ancient Troy; pointing out the reasons which had induced the explorer to select this spot in preference to others which had a certain weight of tradition to support their claims; and describing a few of the most noticeable objects of interest found. The lecturer pointed out that in Dr. Schliemann's opinion the result of the investigations was to confirm most amply his supposition of the coincidence of this site with that of ancient Troy, besides leading us to suppose that three distinct cities had flourished in succession on the spot.

The President then gave a lecture upon the human eye, illustrated by a large model and numerous diagrams lent by Dr. Fergus.

The different Heads of Sections then briefly described the various objects exhibited, which were as follows:—

A magnificent skeleton of Ichthyosaurus, from Kinoulton, presented by G. S. Charlewood (O.M.)

A selection of minerals from the Society's collection.

A selection of Bones and Skeletons of Birds, to illustrate their powers of flight, from the Society's collection.

A new Thermo-electric Battery, and apparatus for showing the guinea and feather experiment, exhibited by G. F. Rodwell, Esq.

Trap-door spiders and nests from Mentone, exhibited by the President.

British and Saxon Coins recently added to the Society's collection.

There were upwards of 100 persons present, including several Visitors from the town and neighbourhood.

FIELD DAY, MAY 30TH, 1874.

Notwithstanding the postponement of the expedition from the previous Saturday, on account of bad weather, no less than 44 members had a most successful day at Chilton Foliatt, the number being larger than on any previous occasion. Owing to its being so late in the season, the Ornithological section had less success than usual. The Geological, notwithstanding unusual energy, added but little to their collections. In Botany three new species were added to the list, *Hydrocotyle vulgaris*, *Scirpus cæspitosus* and *Carex filiformis*: but only 168 species were observed in flower, a much smaller number than usual at this time of year. The weather was magnificent and the day in every respect most enjoyable.

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FIELD DAY, JULY 4TH, 1874.

A far smaller number than last time went to Huish, in order to be near Oare Hill, for the benefit of the Geological section. The afternoon proved very showery, but though all sections worked their utmost, no discovery of any importance was made. The Geological section, by their energetic use of pick-axe and hammer, nearly succeeded in rendering the road impassable, and several fossils rewarded their exertions.

GENERAL MEETING, JULY 10TH, 1874.

The Rev. A. Babington read a paper on "The predisposing causes for the perception of Ghosts," after which the company dispersed to examine the objects displayed for exhibition.

Exhibitions—A large case of Chinese objects, presented by C. W. Everard, Esq.

A large collection of Indian Birds, presented by H. C. Spry, Esq.

A selection of Chalk fossils and forms of Quartz, from the Society's collection.

A Chladni's vibrating plate, instrument for showing the weight of air, &c., exhibited by A. E. Garrod.

There were 145 persons present, including Members and Visitors.

MEETING HELD JULY 15TH, 1874.

This was a meeting for the election of officers for the ensuing term. J. N. Atkinson was nominated Secretary by the President.

C. W. Bourne, Esq., C. R. Draper, and A. E. Garrod were elected on the Committee. G. H. Dawson, Esq., Treasurer. R. W. Doyne, Curator and Librarian.

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PHYSICAL SECTION.

MEETING HELD MAY 22ND, 1874.

After some introductory remarks by G. F. Rodwell, Esq.,

A. E. Garrod read a paper on "Fluorescence," illustrated by experiments.

There were 43 persons present, 26 Members, and 17 Visitors.

MR. RODWELL'S remarks were as follows:—

INTRODUCTORY REMARKS ON THE STUDY OF THE EXPERIMENTAL SCIENCES.

I am glad to congratulate you—Members of this Physical Section—on the fact that our work has commenced. It depends upon yourselves whether or no the Section will continue to exist, whether or no grist will be brought to the mill. Our parent Society is now surrounded by offspring: a family of good healthy children; let us hope that they will be an honour to their parent, and that we, the last-born of all, shall grow up side by side with our elder brothers and sisters, and attain maturity. Remember that this section is a corporation of your own, and that as it depends upon you for its vitality, so you have all alike a voice in everything that relates to it. In its capacity of a storehouse of knowledge, it will gladly welcome any new experiment, or new rendering of an old experiment, or the account of any natural phenomenon you may have witnessed, or any suggestion which may help to simplify a received explanation; or any matter connected with the history of science, or any sound scientific query which may occur to you. I want you to be not alone listeners, not alone receptacles of knowledge, but workers, talkers, carriers of knowledge, providers of knowledge. Some of you have modestly said to me "I shall come to learn, not to teach," but I tell you we are all alike listeners and learners. The book of Nature is so vast that no one has even half read it through: when we meet here we shall try to read a few pages together, and each one of you can help to decipher the writing. We all alike come here to learn and to teach. I hope before the end of the Term many of you will read papers, or record observations, or evoke discussions. Do you know that our Royal Society—the most important scientific society in

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Great Britain, the Fellowship of which (limited to fifteen a year) is highly prized, the Transactions of which contain all the most important scientific results of the nation;—do you know that this society originated among a few men who met in each others rooms in Oxford for the discussion of scientific subjects? Do you know that the other great Academies of Europe—the Academie des Sciences of Paris, the Accademia del Cimento of Florence, the Germany Academy of John Joachim Sturm, all originated in the same way? Hence we have no business to be faint-hearted in this matter.

And in order that you may see that nothing is too trivial to be examined, experimented with, and discussed, I will tell you what were the subjects which engaged the attention of some of these early societies. Here is a record of a French society which commenced its meetings in 1633 under the direction of Theophrastus Renaudot. It is called "A general Collection of Discourses of the Virtuosi of France, upon questions of all sorts of philosophy and other natural knowledge, made in the assembly of the Beaux Esprits at Paris, by the most ingenious persons of that nation." Let us see what they have to say for themselves. They call their meetings *Conferences*, and we have record of *two hundred and forty conferences*: two subjects were discussed at each, and usually four persons spoke on each subject. Here are some of the matters discussed:—

"Of the end of all things.

"Of perpetual motion.

"Of wine, and whether it be necessary for soldiers.

"Of the echo.

"How long a man may continue without eating.

"Of judiciary astrology.

"Of the Cabalas.

"Whether is to be preferred a great stature or a small.

"Why the loadstone draws iron.

"Of Genii.

"Who are the most happy in this world, wise men or fools.

"Whether all Sciences may be profitably reduced to one.

"Whether the dinner or supper ought to be the largest.

"Of the original of mountains.

"Of the Unicorn.

"Of the Phœnix.

"Whether a piece of cork laid upon the cask prevents thunder from marring wine contained within it, and why?"

Thus the subjects which engaged the attention of this early Society covered a very wide range of learning. Some of them are discussed just as eagerly now. People have been talking about them any time these two

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centuries—in some cases any time these twenty centuries, and are no wiser now than they were before. Here are two conferences, the subjects of which are now quite at the surface:

"Whether it be expedient for women to be learned?"

"Whether it be better to bury or to burn the bodies of the dead?"

In this collection of conferences we have indeed a great accumulation of 17th century ideas, and, if time permitted, we should enjoy to linger among the quaint old sayings and thoughts of these philosophers. But let us turn to the first beginnings, of our more scientific Royal Society, at a time when its members played with Nature, and believed in her as a child believes in a new doll, forgetting that the mysteries of things are hidden, and have to be extracted by dire processes of heat and cold, electricity and magnetism, mechanical force and chemical affinity—all the ingenious tortures which scientific men have devised. Look at these things on the lecture table, they are all instruments of torture: here you have the counterpart of your thumb-screw, and flesh-tongs, and spiked collar, and rack, and even of the fearful *eiserne frau*. This is how the early fellows of the Royal Society began their work: On the 4th of March, 1661, Sir William Pearsall made this statement—"Take a handfull of the powder of Roman vitriol, put it into a galley-pot in a pint of water, put in two or three small irons the length of a span, and three or four times a day constantly stir the water and powder, and move not the irons at all, but let them stand constantly in night and day; and within the space of three weeks there will be crusted about the irons, as farre as they are in the water, a substance purer than copper, which you may take off, and will be malleable." If Sir William had known a little about metallurgy he would have been aware of the fact that after all this was no great novelty, since the process had been employed by miners to procure copper from its ores for many years previously. "At another meeting Sir Rob. Moray laid before the Society a poisoned dagger sent by the king, who had received it from the East Indies. The dagger was warmed, and with it blood was drawn from a kitten, to see whether it would be killed thereby. The kitten not dying whilst the Society were together, the operator was appointed to observe what should become of it." At the meeting in the following week the wounded kitten was produced alive. And then the learned Fellows—think of them in their big Charles II wigs, and in a perfect spirit of trust in their unaided senses, dreadfully gullible we should call them now, but they were groping in a dim light,—and then I say the learned Fellows gravely talked about the trees that grow diamonds, and the rivers that run precious gums; about boats that will not sink, wood that attracts fishes; barnacles, vipers, and an unicorn's horn; seeds that fell from heaven, and the "poyson related to be so quick as to turne a man's blood to gelly." And Mr. Croune presented "a glass jar full

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of the powder of the bodies of vipers, and Dr. Wilkins, Bishop of Chester, and the author of a book on Mathematical Magic, presented "pipes of several bores;" and the Amanuensis produced serpents, "which being fired and cast in the water, burnt there to the bounce." The Duke of Buckingham presented a piece of an Unicorn's horn, and the superstitious and most gullible Sir Kenelm Digby "brought in a letter from a friend of his in Florence, written in 1656, which treats of a petrified city and inhabitants." Oh what pleasant meetings those must have been! Magic and the marvellous, travellers *stories*, tales worthy of the Arabian Nights, visits from the King, and the "Lord Ambassadour of Genoa." How I wish we could hope to make our meetings half as entertaining. But this side of the romance of science has passed away, and we have hard bullying scientific facts to deal with, which have no elasticity, no possibility of yielding.

"Do not all charms fly
At the mere touch of cold philosophy?
There was an awful rainbow, once, in heaven.
We know her woof, her texture. She is given
In the dull catalogue of common things—
Philosophy could clip an angel's wings."

Let it be our aim to prove as often as we meet here, that Natural Philosophy is not that cold, impassive study which Keats would make it: that there centres around each law of Nature a harmony and a consistency which nothing can lessen, nothing can mar; that the working of these laws results in phonomena as wonderful as any magic of former ages. And let us, if you will, take as our motto that which I once saw written beneath a portrait of Gauss:

"Thou Nature art my goddess—
To thy laws my services are bound."

And let us add thereto that other saying of Oersted—one of the truest and greatest natural philosophers that ever lived—

"The laws of Nature are the thoughts of God."

MEETING HELD JUNE 5TH, 1874.

J. D. Rogers read a paper on "Matter and Force," illustrated by experiments.

G. F. Rodwell, Esq., exhibited a Thermo-Electric Battery.

There were 37 persons present, 25 Members, and 12 Visitors.

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MATTER AND FORCE.

"*Ex nihilo nil fit.*"

In treating of Matter and Force I intend first of all to give some account of the way in which men arrived at the division of Nature into Matter and Force; secondly, to try and describe the exact relations which subsist between Matter and Force; thirdly, to illustrate the ultimate laws of Matter and Force: the Indestructibility of Matter and the Conservation of Force.

In the first days of Science men tried to search into the secrets of Nature, directly. All Science was one: they had no divisions, no separate branches of Science. Every thing was called Sophia. This name was afterwards changed to Philosophy from two causes: firstly, men began to see how limited their knowledge must be, how presumptous it was to call what they knew Wisdom: secondly, a certain class of Sophists arose, who for some cause or other fell into disrepute: and so the searchers after scientific knowledge did not like mixing up their profession with that of these Sophists: and so they adopted the name Philosophy. About the same time another change took place. Men began to see how vast was the field of science, how innumerable the hidden things of Nature, and so they separated off from one another: some devoted their lives to one kind of Science, others to other kinds of Science. They could not study Nature as a whole, so they studied the different parts, the different details of Nature. The first rough division of Nature was into Mind and Matter. This had great force in the Middle Ages. Spinoza divided the universe into Mind and Matter, which he said were two co-existing entities, utterly unallied, but able somehow or other to communicate with one another. As you sometimes hear this division of Science at the present day, it may be as well to point out its weak points. On the one hand there are many things without us, which are not matter, which we call the Natural Forces: on the other hand Mind is not so utterly opposed to Matter, it is probably an appendage or property of a peculiarly constituted Matter. Just as heat is a mere property of the sun, so Mind is a mere property of the Brain. This is proved by several facts. A Welshman had resided in London for a long time, and had forgotten his Welsh entirely, and only spoke English. He received a severe blow on the head, was taken to a hospital; on his recovery he had literally had all the English knocked out of him, and could only speak Welsh, or, physically speaking, the part of his brain which contained the power of speaking English was smashed: while that part which could speak Welsh regained its ascendancy, owing to the defeat of its victorious opponent, and reigned alone. There are plenty of other facts which prove the same fact: Flourens found that the consciousness of fowls resided in the ventricles of the brain, by taking

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off all the layers of the brain successively and finding that the fowls did not lose consciousness till he removed the ventricles. Moleschott's famous sentence "No thought without Phosphorus" was not without foundation. The brain-matter of Cuvier exceeds that of most people by about 10 oz.: while the furrows in Beethoven's brain were deeper and more strongly marked than those of other people. Well, then, all this shows that thought is a property of the nerve-centre we call the brain, just as heat or light belongs to the sun, only it is something more subtle, more flexible. From these reasons then we must reject the division of Nature into Mind and Substance, or as some people call it, the *Ego*, the *non Ego*.

A second very common division of Nature is into Organic and Inorganic Life. This was exploded not long ago. We know now that many substances formerly only got from organic substances or those bodies whose atoms are arranged in cells, can also be got from inorganic. "Spirits of wine and costly perfumes are made from coals, candles from slate, Prussian blue, urea, tannine, and many other substances which as was formerly believed could only be produced by organic bodies are got from the inorganic materials furnished by Nature." (Büchner, p. 223). This division of Nature is exploded. One more remains: this we will use to-day. It is the division of Nature into Matter and Force.

There are two great laws of Matter and Force—one easily to be proved, the other requiring more elaborate proof; both however, are the fundamental truths, the axioms of science; both, at the same time, are nearly connected to one another in nature. We may fairly say, that if we don't accept these two truths, we cannot accept any science whatsoever. They are the corner stones of science: if they stand, science stands, if they fall, science falls. I refer to the Indestructibility of Matter, and the Conservation, or Persistence of Force. I shall say a few words about the former, before I go on to discuss the latter. Nothing is to be destroyed. Change can be produced. Nothing more than this. If we separate water into its component elements, and take care that we do not let any escape, they will weigh together, just as much as the compound did. Nothing is lost. The ruins of Chicago are flying about in the air at the present moment, only in the shape of carbonic acid gas. The ruins of Jerusalem, the ruins of the Eternal City, the ruins of imperial Athens, are wandering about in mid air, changed indeed in form, but not in quantity. Heracleitus, an old Greek philosopher, whose wild nature, whose gloomy imagination, won him the name of the Dark Philosopher, expressed this truth 2,300 years ago. All things, he said, present a perpetual flux and re-flux. Empedocles, that wild form of which we know so little, and all that we do know of him indicates a certain strange grandeur and majesty of soul—Empedocles expressed it, with the fire of

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the passionate poet, and the accuracy of a man of science. "Fools," he exclaims,—

"Who think ought can begin to be which was not,
Or that ought which is, can perish and utterly decay.
Another truth I now unfold: no natural birth
Is there of mortal things, nor death's destruction final.
Nothing is there but a mingling, and then a separation of the mingled,
Which are called a birth and death by ignorant mortals."

This is perhaps the most remarkable anticipation of the truths of science, that the history of the world bears record of.

Let us now turn to the law of the Persistence of Force, or the Conservation of Energy. Both of these names it bears. When we talk of force and not energy, we mean that which produces, and can produce motion, as opposed to the moving itself. And so the formulas mean the same thing. The law may be stated thus,—The total quantity of all the forces in the whole universe remains eternal and unchanged throughout all their changes. The universe, then, has a certain store of energy which it has had for ever, which it has, which it will have for ever. This energy is changeable. Its locality may be changed, its particular mode of manifestation may be changed, but its total amount, its quantity remains the same for ever. More than 3,000 years ago, Balaam, we are told, struck his ass; the energy manifested by his arm has not finished taking effect. The vibrations of air, distributed over space, infinitesimal, impalpable, immeasurably small; or perhaps movements of heated bodies serve to perpetuate the memory of his blow; to be a standing monument of the energy he employed on that occasion. The slap Ajax gave his thigh; the sound thrashing Ulysses inflicted on Thersites; the birching Irene gave her son Constantine; the blows which deprived Cæsar of his life, have not disappeared; vibrations are still going on around us, which are the direct effect of these manifestations of energy.

Now, we cannot directly prove this, as we can prove the Indestructibility of Matter. This something, which we call force, cannot be weighed. And there is another circumstance which stands in the way of a direct proof of this principle; it is that in changing the form of any force, we cannot do what we will with the total amount of force, we are dealing with; some must be apparently lost to us; some must be spent in a heat, which is not measurable; a heat due to the friction of the air and the radiation into space with some bodies, and in every substance due more or less to what is called the viscosity of bodies. But we can, generally speaking, allow for this, and this considered, the following rule which is only a restatement of the law of the conservation of energy, can be proved in every instance to be true.

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The rule is this, "among natural forces their capacity for work is exhausted in the degree in which they actually perform work."

The simplest way in which this rule may be verified is by confining our attention to one class of Forces at a time. We will do this first. We will afterwards examine the more complex phenomena presented by the changes of one Force into another.

Firstly, how are we to measure the amount of force done? There are two standards which are used. One is the foot pound. A foot pound of work means the amount of work done by raising a pound of anything through a foot. Two foot-pounds means the work done by raising two pounds through one foot, or one pound through two feet. The awkwardness of this system is apparent. Our English weight and length measures are conducted on a very bad system, "as every school-boy knows," who has experienced the difficulties of consigning them to memory. Accordingly the second plan is almost universally in vogue. Instead of a foot pound we speak of a Kilogrammetre, or that force which is required to raise a kilogramme up one metre. (A kilogramme = 2lbs. avoirdupois; a metre = 39 inches approximately.)

Let us suppose ten labourers raising a weight of ten cwt. by means of a rope passing over a single pulley. Every time the rope is pulled down ten metres, the load is raised ten metres. Now suppose the 10 cwt. are fastened instead of to a single pulley to a block of 10 pulleys. A single labourer can raise the weight now. Surely, you will say, this ruse has cheated nature out of her natural force. But if we look closer we shall see that for every 10 metres the single labourer lowers the rope, the weight is only raised 1 metre—not 10 as before. So that the apparent gain in point of motive power, is exactly compensated by a corresponding loss of time: and the total aggregate of labour remains the same.

Again all of you, I suppose, understand what is meant by a toothed wheel. Get a small wheel with six teeth, whose revolution makes a wheel with 48 teeth revolve, by means of the teeth. Attach a weight to the other end of the big wheel; then by turning round the little wheel our weight would be raised with one eighth of the exertion which would have been employed if the big wheel had been turned directly—but in eight times the length of time.

In the Phenomena of Heat we have an apparent contradiction, a real confirmation of this theory. Take a kilogramme of ice at a temperature below freezing point, apply heat to it. It will gradually increase in temperature as we may ascertain by the thermometer. At freezing point it suddenly stops increasing. If heat be still applied to it, the thermometer shows no signs of rising, the heat appears to be wasted. At last after 80° centigrade have been applied to the ice, the thermometer begins to rise again. What are we to reply to this apparent waste of 80 units of heat? We

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must reply that they were not wasted—only the mode of their operation was changed. Instead of being employed in radiating heat to objects without: all its force was spent in dissolving the cohesion of the particles of the ice: in melting the ice. In the same way when we try to heat a kilogramme of water at boiling point—enough heat to raise one kilogramme through 537° centigrade, or 537 kilogrammes through 1° centigrade—is employed—not in radiating heat, and increasing the temperature (for the thermometer remains unchanged) but in overcoming the cohesion of the water and making it into vapour. I daresay many of you have noticed, while "brewing," that if you keep your cocoa pot on the fire after it has began to boil, the water does not increase in temperature. Well the water will not increase in temperature till you have kept your pot on long enough to boil it nearly 5½ times over: and then you will only find steam, and not water left. And so the energy of the heat has not been wasted as it seems to be. It has only not appeared as temperature.

I must now introduce you to another kind of energy—the Energy of Position. Let us take an illustration of it. We see a stone at the top of a house: we roll it over the edge: the energy displayed by its fall seems to have been attained without any corresponding expenditure of energy. But in reality, the energy required to lift it up to that height is exactly equal to the energy brought into play by its fall. Energy of Position, then implies the expenditure of energy in such a way, that the amount of work to be got from it, be not at once brought into action: but is so to speak laid by—stored up for some future occasion when the application of some small amount of energy will suffice to bring the stored up forces into play. The only difference between the ordinary modes of energy, which we have been considering, and the Energy of Position, is that in the one case the expenditure of Force is immediately followed by the work done by it: and in the other case a period of time is allowed to elapse between the cause and effect, during which the force of the body remains unused, quiescent. This may be illustrated by the bow: a certain amount of force is used in bending it: the shooter then pauses to take aim: meanwhile the string of the bow has the energy of position: he then lets go and the result of an effort made a minute or two ago, is manifested. Take again the instance of coals: what enables us to get so much, apparently unmerited, work out of a fire? It is simply this—the force which was expended, thousands of years ago in overcoming the chemical affinity, which attracted the oxgyen and carbon has remained dormant, has not produced any results, has so to speak been invested in a bank for thousands of years: and so when we burn a fire, we are not creating Force, we are not obtaining force by the mere application of the match: but we are using a Force which was stored up in the coal and has remained unused for a long time. The same remarks

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apply to rifle shooting. Gunpowder contains in it a power which was invested in it, and has remained dormant for a long time.

The apparent anomalies to this rule of conservation I have shown to be confirmations of it. The pulley, the toothed wheel, the Phenomena of heat and of the energy of Position—if we look at them closely—are not—as may at first sight seem to be the case—exceptions, they are the most direct proofs of this rule. And the only way we have of proving it is to examine the variations of the different Forces and show that beneath all this change the total quantity remains unaltered and unalterable.

Hitherto my illustrations have been onesided. I have only considered those cases in which the working of one Particular Force is changed. A far more complex and more interesting subject is where different forces are changed with one another; where Heat is changed into mechanical force, where electricity is changed into Heat, or Work. The experiments by which these instances are verified are very difficult to make: since if we try to change work into heat, some of the work is certain to be changed into something else, to transpire as sound, or to remain unchanged as work, or to become vibrations of the air. We are nearly certain to lose sight of some one part of the force. For instance when we to try to change heat into work, some part is sure to remain unchanged; some part is sure to disappear as radiated heat and aetherial vibrations; some part as absorbed heat, owing to that viscous property which all substances possess. When we fire off a gun, we cannot make all the energy stored up in the gun appear as work, or velocity; some of it escapes as light, some as sound, and a great deal as heat—a fact which you may know very well if you have ever felt a gun directly after it has been fired off. Or take the instance of the pendulum, a weight is raised to a certain height, and so acquires energy of position; it is then allowed to swing; in addition to the gravity which brings it back to its original position, it has velocity, acquired by the energy we expended upon it, in resisting gravity, and raising it to the height, we did; consequently, it swings up to an equal point on the other side, and then swings back again. At seeing this a great hope thrills our bosoms. Have we not at last discovered a means of securing that search of centuries, Perpetual Motion? Alas! no. All the motion cannot remain as motion. Part of it is lost by friction with the air, and the corresponding generation of heat; part of it disappears, as absorbed heat, owing to the viscosity of the pendulum. For each infinitesimal portion of force which is spent in heat, an exactly equivalent amount of velocity is lost; and so our pendulum, poise we it never so nicely, at last stops.

Not only do we know that motion is changed into Heat, and *vice versa*—but we know exactly how much heat is equivalent to how much motion. The way it

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is found is by *this* (δειικτικῶς) instrument. Here we have a weight attached to a pulley. It descends by gravity. Its descent turns round a pole attached to a system of paddles in this box, and so each time this weight descends the paddles cause a friction of the water. What is the result? we have a kilogramme weight descend through 424 metres in order to raise one kilogramme of water 1 degree C. in Temperature, or to formulate it properly, one heat unit=424 units of work. By this we are enabled to know that there is a constant and unvariable relation between Heat and Mechanical Force.

Leaving the subject of Mechanical Force—we can prove that Heat and Electricity are interchangeable. Take an electric battery and send a current of electricity through it. Attach a piece of platinum wire, which is a bad conductor of electricity, to the two loose wire-ends of the battery, and the poles of the battery. When electricity tries to go through this platinum wire, it appears not as electricity, its form is changed—but it appears as heat. The wire is heated white hot. So much for the conversion of electricity into Heat. We can illustrate the converse process.

Here is a thermopile, it is formed of metal bars of bismuth and antimony soldered together. Warm one of the junctions. Then, naturally one would expect the heat to be gradually conducted to the other junction, on the opposite side. But something else occurs, the Heat instead of being passed on as heat, is passed on as Electricity. A current of Positive Electricity is generated.

So when we seem to be losing heat, we are not really losing it: it is only reappearing in another shape as electricity. There is one of the Forces of Nature we have not touched on as yet: it is Magnetism. We see the Magnet needle moving and changing—seemingly with no exact cause. If there is no cause for magnetic variations then the Principle of Conservation is violated. But if we look a little closer we shall be able to see that the cause of the Magnetic storms as they are called, exist sometimes millions of miles away. In the year 1859 great wonders occurred. In America, a flame of fire followed the pen of the electric telegraph: in Norway, telegraphic messages were not carried: in Melbourne a great Aurora lit up the sky: and all over the earth the magnetic needle had been turned aside. What was the cause of these prodigies? At the same time two Astronomers were watching the sun when they suddenly beheld an intensely bright light, far more brilliant than the sun's surface, appear above the spots. For five minutes this strange brilliancy shone. In five minutes it was gone. But in that time the spots had travelled more than 35,000 miles. We are to conclude from this, that the Forces of Nature are subtly connected with one another. The atmospheric disturbance which appeared as an intensely bright light in the central luminary of our system sent a responsive thrill through the mysterious forces of Nature: a

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message from the sun caused these strange terrestrial phenomena. And so we have shown that there is no such a thing as creation or dissolution of force.

What does Science tell us of the beginning of all this Force? all the varied phenomena of Heat, of Mechanical Force, we may trace to the Sun. The central luminary of our system supplies us with all this. But whence does he get it? some say infinite meteors are being hurled into the Sun's surface: and that these supply it with heat and light: others say that the sun has been slowly contracting, and that owing to this, it has been radiating Heat. But where did these meteors or this contracting body derive its Force? The voice of Science is dumb. The voice of Nature, eloquent erewhile with stirring truths, eloquent with thoughts too deep for tears, is mute, is hushed. So let it be.

MEETING HELD JUNE 26TH, 1874.

A. S. Bright read a paper on "The Barometer," illustrated by experiments and several barometers.

G. F. Rodwell, Esq., exhibited an ancient pocket Sun-dial.

A. E. Garrod exhibited a Chladni's vibrating plate and a compound pendulum.

There were 52 persons present, 38 Members, and 14 Visitors.

MEETING HELD JULY 15TH, 1874.

H. D. Drury, Esq., read a paper on "The Transit of Venus."

A. E. Garrod exhibited some Geissler's Tubes kindly lent by J. B. Gilmore, Esq.

There were 47 persons present, 30 Members, and 17 Visitors.

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THE TRANSIT OF VENUS.

I PROPOSE speaking to you to night about the coming Transit of Venus. Many of you have no doubt read and thought a good deal about it, and some few of you may perhaps be not a little puzzled as to what it all means, and why such a fuss should be made about the mere crossing of a planet across the sun's disc. If I can be of any help to these few in removing misty notions, and in enabling them to realise the importance of the phenomenon called the Transit of Venus, then the object of my paper will be amply fulfilled, and interesting as the subject is in itself, it will be made doubly so to me by the thought that I have been partially the means of inducing others to turn their attention to it.

I propose to explain

(i.) What is meant by a Transit of Venus, pointing out the rarity of the occurrence, and explaining as best I can the reason of its rarity.

(ii.) Its importance to us.

(iii.) The methods of observing the Transit.

You see then I have plenty of work before me, so without more introduction I will plunge into my subject.

What is meant by a Transit of Venus? This I can best answer by an example. Suppose there to be marked out on a level plain two consecutive circles, and suppose that we start two people A and B to walk them, A taking the inner and B the outer circle. Let them walk at uniform rates, and let A perform his circle in a shorter time than B performs his. It is plain that after some time, A and B will arrive in such a position that the line joining the positions of A and B will pass through the centre, so that B's view of the centre is partially cut off by reason of A crossing, but that in a few seconds more the centre will again come full in view, A having shot slightly ahead. This partial eclipse of the centre would be called in Astronomy the transit of A across the centre with respect to B.

Suppose it takes A five hours, and B eight hours to perform each his own circle, and suppose the first transit were to take place at 12 o'clock in the day, let us ascertain at what hour a second transit would occur. The formula giving the interval of time between two successive transits is simple enough, and one which anyone of you might work out for yourselves. The formula says, multiply together the times that it takes each person to perform his circle,

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and divide the product by the difference of the times. In this example if we multiply 5 by 8, and divide by 3, we obtain 13⅓ hours as the interval of time between two successive transits; therefore, if the first transit occurred at 12 o'clock, the second transit would not occur till 1.20 a.m.

But mark, the second transit will not take place on the same part of the circle, for during the interval, 13⅓ hours, A will have made two complete revolutions, and will be more than half way in his third; in fact 40 hours will elapse before a transit will occur again in the same part of the circle.

Let us examine now what would be the effect on the transits of tilting the plane of one of the circles through an angle about a common diameter, supposing the circles in all other respects to remain the same.

It is plain that the effect of such a tilting would be to diminish greatly the number of transits, for now a transit can only occur when A and B are quite close to their common diameter; this diameter we shall henceforth speak of as the line of nodes, it is the line of intersection of the planes of the two circles; a transit can only occur then, when A and B are quite close to the line of nodes, whereas in the former case a transit could occur at any part of the circles.

We are now in a position to understand what is meant by a Transit of Venus. You know that the planet Venus, like our own earth, moves round the Sun in a curve which is not quite circular, but which differs so little from the circle that the eye could hardly detect the difference. The sun is not in the exact centre of these curves, but it is sufficient for our purposes to imagine the sun to occupy the centre, and also to assume the orbits of the earth and Venus to be true circles. The earth performs its circle in 365·256 days, and Venus in 224·7. If the planes of the two orbits were coincident, the interval between two successive transits would be, according to the formula already mentioned.

$$\frac{365{\cdot}256 \times 224{\cdot}7}{365{\cdot}256 - 224{\cdot}7}$$

If we work this out we find 584 days as the interval; but the orbit of Venus is inclined to the orbit of the earth, and thus many of the transits that would take place are now excluded. Now remark that 5 of these intervals make 2,920 days, which almost corresponds to eight revolutions of the earth, which make 2922·05 days. If, therefore, a transit should occur when the earth and Venus were exactly on the line of nodes, another would occur eight years afterwards, at a point near the line of nodes, distant from the latter by the space the earth travels in two days—*i.e.*, a transit would occur if the orbits were not inclined; but the orbits are too much inclined to admit of a transit. To admit of a transit the earth must be still nearer the line of nodes,

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and to accomplish this we have only to suppose the first transit to take place when the earth and Venus are a little past the line of nodes: the second transit will then take place when the two are a little in advance of the nodes.

So much for the mere phenomenon of a transit. I must now pass on to the next point, which is the important point to us,—the use of a Transit of Venus.

In speaking of the map of a country you are all familiar with the expression the scale of the map. The map of a country is in fact the country with all its parts reduced in exact proportion, and the scale of the map is the proportion according to which its parts are reduced. In the corner of every map is printed the scale according to which the map is formed. Now suppose a person were to hand you over a map with the scale not marked, you will see that for many purposes the map is quite worthless to you; for example, by not knowing the scale you are unable to judge of the distances between different parts of the map—you can judge relative distances but no more: you can say for example that two places are twice as far apart as two other places, but what those distances may be you are unable to state; so one of the first things you would do with your map would be to ascertain the scale, and this you might do by walking the distance between two places marked on the map. Suppose you find that this distance is exactly two miles, you then ascertain how this distance is represented on the map. Suppose the map puts it down as one inch, the scale of the map would therefore be two miles to the inch, or one to the half inch. Hence two towns which are distant on the map by three inches would be really six miles apart.

Now this is precisely the kind of map of the heavens we possess; we can lay down the orbits of the planets in exact scale, but the scale upon which that plan is drawn has yet to be determined: to settle this vexed question we invoke the aid of the planet Venus.

You will perceive that the problem amounts to this—to find our distance from the sun; find this distance, and we find our scale.

When I say that the distance has yet to be determined, I mean accurately, for roughly speaking our distance is known—it is something between 95 and 91 million miles. I might just briefly indicate two different methods by which astronomers have arrived at this result.

You are all aware of the fact that light is not instantaneous, but that it takes a sensible time to propagate itself through space. To make this clear, imagine that you had far away in space a great mass of some very inflammable substance, and imagine a person to put a light to this,—a great flood of light would be thereby given out, but that flood of light would not reach you for some seconds after the match has been applied to the body, and furthermore the

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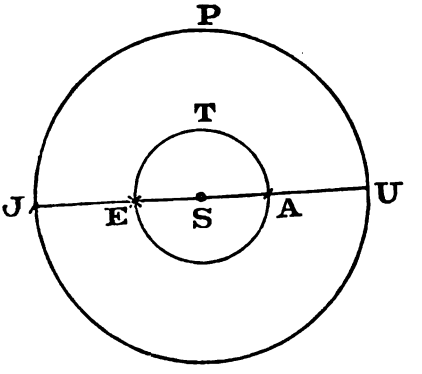
body would appear luminous to you for some seconds after it has ceased to emit any light. Now the planet Jupiter, the largest and grandest of all our planets, is attended as you know by four moons, which are to him what our moon is to us. The orbit in which he moves is very much greater than our own. Suppose JUP to represent Jupiter's, and EAT the earth's orbit, let them occupy at any time such a position with regard to S as represented in the figure.



Should this positionhappen at the time that one of his moons is crossing his disc, we should observe the phenomenon, but not for some short time after the event, that time being the time that it takes light to travel from Jupiter to us. The interval of time is about 38 minutes, so that if an eclipse of Jupiter took place at eight o'clock, we should not observe it till 22 minutes to 9. Suppose now the same phenomenon takes place when the earth is at the other side of her orbit, so that, as before, the three—Jupiter, the Sun and Earth—are in the same line, but the sun in the middle. It is plain that a longer time will elapse before seeing the eclipse, on account of the distance between us and Jupiter being much greater, the distance having been increased, as you see, by the diameter of the earth's orbit. It is found by observation that there is a difference of 16 minutes in the times as deduced from the two positions E and A. Sixteen minutes must therefore be the time that it takes light to travel over a distance equal to the diameter of the earth's orbit. Light we know, moves at the rate of 192,000 miles per second, there are 960 seconds in 16 minutes ∴ the diameter of the earth contains 192,000 × 960 miles.

The second method of solving this problem is most ingenious. It was discovered by Bradley, an English Astronomer of the last century.

If you were standing still under a shower of rain, and if the rain were coming straight down, to protect yourself from the rain you would hold your umbrella straight over your head; but if you were walking you would incline your umbrella slightly in the direction in which you were going, and the faster you walk the more you would incline your umbrella. Given the pace at which the rain is coming down, and given the man's rate of walking, you can say exactly at what angle he should hold his umbrella. In this way—Let a drop

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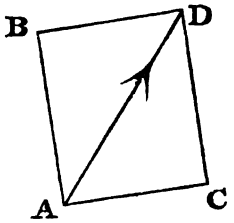
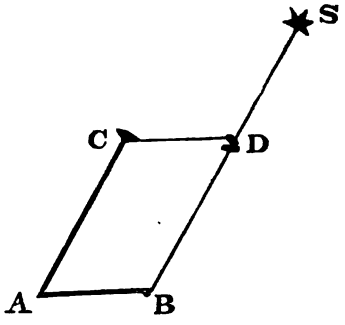
of rain fall through a space AB in one second, and let the man during that second walk the distance, AC; then if through B, we draw a line parallel to AC, and through C a line parallel to AB, if these lines intersect in D, the best direction in which he can hold his umbrella is AD. Therefore, given the pace at which the rain is coming down, and given the angle at which the man holds his umbrella, we are able to find the rate at which the man is walking.



Rough as this illustration is, it will serve to explain the following fact in astronomy:—It is found that if we want to view a star through a telescope, the latter must not be pointed straight to the star, but inclined slightly; the inclination is so slight that it needs very fine instruments to measure it, it is enough for us to know that there is a slight inclination, and that the amount of that inclination can be measured.

Suppose S to be a star, and A the position of an observer at any moment, let the light of the star be travelling in the direction SB: now if the earth were perfectly still the observer would point his telescope parallel to the line BS, and the telescope would catch the light of the star; but the earth is not still, so for the very same reason that the man in the rain has to incline his umbrella, the astronomer has to incline his telescope. Now we know the velocity of light, and a good instrument will tell us the angle at which we incline our telescope; with these two data we find the rate at which the earth is moving, just as in our first case we found the pace at which the man was walking. But what does this do for us? A moment's thought will show you that the problem is really solved; for you know that when the length of the circumference of a circle is known, its radius is known. And if a person were to walk a circle at a uniform pace, and you know that pace, and know also how many hours he takes to do the whole circle, you can find what the length of the circumference is. This is precisely what we do know. We know that the earth performs its circle in one year, or 365 days. By this method of Bradley's we find the rate at which it travels, from these two we find the length of its circular path in the heavens, and hence is easily deduced the radius of its circle—*i.e.*, the distance of the earth from the sun.



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But of all these methods the one that Astronomers look forward to as likely to give the most accurate results, is the method depending on the Transit of Venus.

I wish you to understand clearly how it is possible to obtain one's distance from an object which is quite inaccessible. Suppose for example you are at one side of a deep river, over which there is no bridge, and you want to find your distance from a tower on the other side of the river, you would proceed in this way—Choose two places, B and C, and measure their distance apart accurately, suppose it to be one mile; draw this distance, say to one inch, on a sheet of paper, then take your telescope mounted so as to measure any angle through which it is turned. Place the telescope at B pointing towards C. Then turn it till it points at the distant object and find what the angle at B is. Draw the line BA upon the paper and you know that the distant object lies somewhere on the line BA. Do the same with C and then you know that the distant object lies somewhere on the line CA. But A is the only point lying both on BA and CA, hence A corresponds to the distant object. If on measuring BA you find it to be 80 inches, then since CB which is 1 inch means 1 mile, CA which is 80 inches means 80 miles, and this is what you wanted to find out.

It is in this way that our distance from the Moon is discovered. But the same method fails when applied to the Sun: the distance is so great that the smallest error made in measuring the angles, would throw us out millions of miles in computing the distance. In finding our distance from an object, such as the Sun, which is an enormous distance, the method we have recourse to is this.

Let AB be the positions of two observers at opposite ends of the earth; and S the object whose distance we want.

I say that if we could determine the size of the angle ASB; we could determine how much greater AS is than AB, if then we know the distance between A and B, and we do know this for it is the Earth's diameter, we can find AS.

To make this statement clear, let us draw on paper two lines inclined to one another at this angle ASB, take a circle of any radius, say an inch in diameter, and move the circle up between the lines until it touches each of them, measure how many inches there are between the points at which the circle touches and the point of intersection of the lines, if this distance turn out to be 1000 inches, then we infer that as one inch on paper means the diameter of the earth, that is 8000 miles, so the 1000 inches would mean

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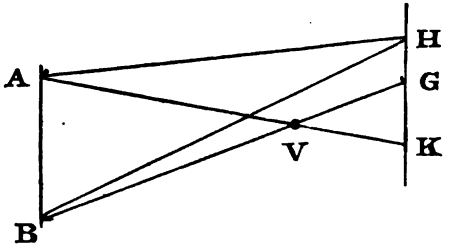
1000 diameters, and therefore, the body would be distant from the earth 8,000,000 miles.

This angle is called the Sun's Parallax, and it is this angle which a transit of Venus enables us to measure. Four methods have been devised for utilising a transit of Venus so as to measure the angle. The first is called the Direct Method; the second, Halley's; the third, Delisle's; and lastly, the American method, by which photographs of Venus are taken at intervals of a few seconds while crossing the Sun's disc. I cannot of course enter into full explanation of these methods; they are very complicated, and would need a great deal of time to explain. I must be content to give you a general notion of the way in which astronomers go to work.

I shall commence with the direct method. Imagine two people A and B to be on the same side of a building, and suppose a carriage to be passing between them and the building.



Let A,B, be the positions of the two observers, HK the building, and V the position of the carriage at any instant while crossing.

Suppose H to be some prominent point of the House, say the Hall door; according to a preconcerted arrangement both observers are to see how far the carriage appears to each of them to be distant from H at some precise moment settled by them beforehand; to the person at A the carriage is distant from H by an angle HAK, to the person at B, by an angle HBG. Now you will easily see, that as soon as we obtain these angles we can calculate the angle AVB. This example is an exact parallel to the Direct Method of observing the transit; we have only to imagine A and B to be the positions of two observers at distant points of the earth, H the centre of the Sun, G and K the projections of Venus on the Sun's disc as seen from B and A; the Astronomers at A and B at some appointed moment observe the angles HAK, HBG; and thus is obtained the angle AVB; but this angle is the Parallax of Venus, knowing which we can calculate our distance from Venus, and our distance from Venus is sufficient to settle the scale of our map.

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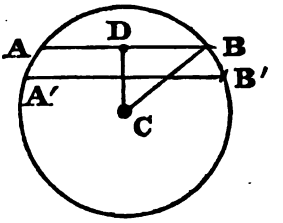
This method is open to one grave objection, you see that it is essential that the observers should take their observations at the same moment, should one observer be ten minutes, say, behind time, it would vitiate the whole observation; now when your two observers are placed as we have supposed them, at widely different positions on the earth, it becomes no easy matter to say that when it is such and such a time at the one place, it is exactly such and such a time at the second place; to say this with certainty one has to know the difference of longitude of the two stations with great exactness, and this is itself a matter of no small difficulty.

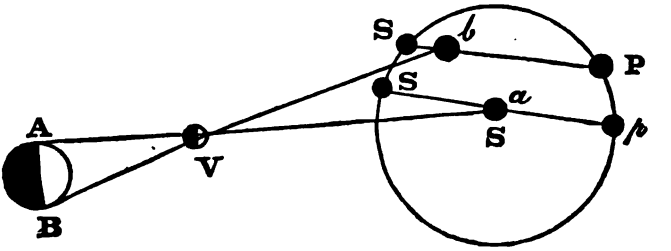
We now come to Halley's method. Before entering on it I would call your attention to the following easy proposition in Geometry.

If we place in a circle, the length of whose radius is known, a line of known length, then the distance of this line from the centre, will be always the same, no matter in what position you place the line; and it is possible to calculate this distance.



Suppose then we place in the circle two lines whose lengths are different, and place them parallel to one another, it follows that since the distance of each from the centre is known, their distance apart must be known, it would be the difference of the distances from the centre if both lines lay on the same side of the centre, the sum of the distances if they lay on opposite sides.

If you understand this proposition thoroughly you will be quite prepared for Halley's method. Suppose we put two people to walk across a circle (see last fig.) along parallel lines, AB, A'B', if we know the pace at which each is going, and the time that it takes each of them to cross, we can find the lengths of their paths, and therefore by the preceding proposition we are enabled to find the distance between the paths.



Now let A, B, be the positions of two observers on opposite sides of the earth, V, the planet Venus, at some moment during the transit.

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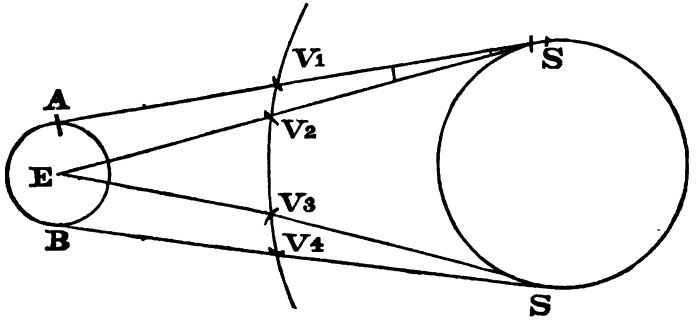
To the observer at A, V will appear to cross the sun's disc along the line Sap, to the observer at B, along the line SbP; to the observer at A, the transit will be of longer duration than to the person at B. Each observer notes with all possible care and precision the time that it takes Venus to cross the sun's disc; now we know the rate at which Venus moves, for she describes her circle relatively to the earth in 584 days, hence we can calculate the length of PS and pS, and thus the distance between the two paths.

Just give me your attention for one moment more, and you will see that the problem is solved; you see that the breadth of the belt PbS paS bears the same ratio to the diameter of the earth that the distance bV bears to BV; now this ratio is know from other considerations to be as nearly as possible 2½ to 1, so that the breadth of the belt is 2½ times as large as the diameter of the earth. Now we have found what angle the breadth of the belt subtends to an eye at the earth, divide this angle by 2½ and we have the angle which the earth's diameter subtends to an eye placed at the distance of the sun, this angle is the sun's Parallax, and thus the problem is solved.

I now proceed to the third method. To explain it I shall have again recourse to the illustration of a carriage passing between us and a distant house. If we are standing still the carriage will take a certain time to pass the house. But if we be also moving, and in the same direction with the carriage, the transit of the carriage will take longer, but if we be moving in the opposite direction to the carriage, the transit will take a shorter time. If then two persons be seated at opposite sides of a merry-go-round, so that at the time the carriage seemed to be passing the distant house, one observer is moving with the carriage and the other in the opposite direction; then one observer will see the time lengthened, and the other shortened. Now the world is such a merry-go-round, and the positions of these two people correspond to the positions of India and Hudson's Bay, as pointed out by Halley.



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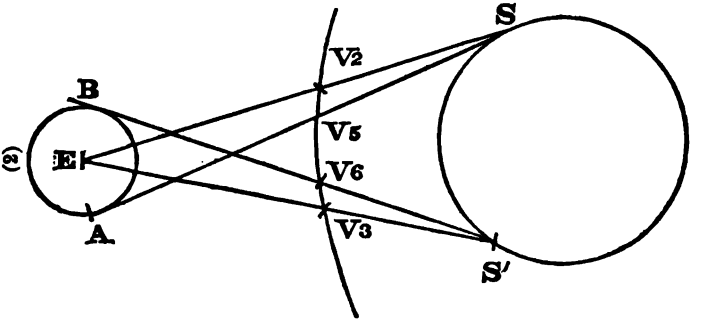
Let SS be the sun, AB the earth, and V1 V2 V3 V4 a portion of the orbit of Venus. There is necessarily one part of the earth where the transit begins earliest, that part would be A as represented by the figure. It is plain that an observer there would see the commencement of the transit before an observer placed in any other position; for example if we could imagine an observer placed at E, the centre of the earth, the transit to him would commence some time after A had observed it, and the interval of time between the two would be the time occupied by Venus in travelling over V1 V2.

Imagine, that by the earth's rotation, the observer at A is carried round to B, just in time to see Venus emerging from the Sun's disc, to the observer at E, the transit will be over, and by the interval of time occupied by Venus in passing from V 3 to V 4, thus the observer at A comes in for the longest transit.



Now just as there is one part of the earth where the transit begins earliest, so there is a part where it begins latest, and that would be at A, as represented by figure 2. To a person here the commencement of the transit would be behind time, as reckoned by the imaginary observer at E, by the same interval, viz., the time that it takes Venus to pass from V2 to V5. If we could imagine this observer transported from A to B just in time to see Venus emerging from the sun's disc, then it is plain from the diagram that his view of the transit is just concluding, while to the observer at E, Venus has to pass from V6 to V3 before she leaves the sun's disc. Thus the observer in the 2nd diagram comes in for the shortest transit. Now it is possible to find the times of the longest and shortest transits, and as you see the difference of these times corresponds to four times the time that Venus takes to travel over V1 V2. It is thus possible to obtain the time that Venus takes to pass over V1 V2, and therefore, since the rate at which Venus is moving is known, we can calculate the angle ASE, and this is the angle we have been endeavouring to obtain.

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Gentlemen, permit me one moment more to tell you what arrangements the scientific nations are making for applying these various methods.

First and foremost comes America, not only has America assigned a much larger sum than any other country to meet the expense of the various expeditions, but she has also undertaken to occupy stations which are the most difficult of access, and the least pleasant of tenure. In number the American stations are eight, of which three are in the Northern Hemisphere, and five in the Southern.

Russia must be placed after America, though coming first as respects the number of stations to be occupied, since she will place observers at no less than twenty-seven stations. All these lie within her own territory, so that the actual expense is not proportionate to their number.

The English forces, as befits the greatest maritime nation in the world, will be more widely spread. With the exception of that part of the expedition which is destined for Egypt, and which will set forth in October, the observing parties have already left this country. They will occupy nine different stations.

Germany and France are also sending out expeditions. In all, including fixed observatories at Melbourne, Cape Town, Madras and so on, and private observing parties, as that of Lord Lindsay, Colonel Campbell, and the like, it is probable that there will be about seventy stations, and that as many as 200 observers will be ready to watch, weather permitting, the progress of the most important astronomical Phenomenon of the present century.

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ORNITHOLOGICAL SECTION.

MEETINGS FROM FEBRUARY TO APRIL.

N.B.—A FULL LIST OF NOTICES IS PRINTED BELOW.

1st.—The first meeting was held on February 21st, with a full attendance of members of the section. G. H. Dawson, Esq., made some preliminary remarks on the principles of division commonly followed in the classification of birds, and a discussion followed on the adaptation of means to ends in the general structure of birds, with some particular instances drawn chiefly from the formation and service of the gizzard and beak.

2nd—MARCH 7th.—The subjects of discussion were the same as those touched upon at the former meeting.—The chief notices were a nest of the missel thrush (without eggs), March 6th, A. E. T. and L. F. P.; and rooks building since the beginning of the month, L. F. P. J. N. Atkinson mentioned the fact of having observed swallows (1873) alight in numbers on a turnip field, apparently in pursuit of the flies on the turnip leaves; and Williams gave an account of finding a tit lark, impaled through the wing feathers, on a piece of wheat stubble, unable to free itself, but otherwise uninjured.

3rd—MARCH 22nd.—A fair number of notices was read out, supplied by members of the section and others since the last meeting, and a discussion followed on the habits and food of the rook. Among other interesting details E. Hunter mentioned, from his own observation, the fact of rooks having a propensity for walnuts, which he had seen them carry off in numbers from the trees.

4th—APRIL 4th.—This meeting, through some misunderstanding, was poorly attended by members of the section. The time was chiefly occupied by discussing notices received since the last meeting, and comparing the dates with those obtained last year.

MAY TO JULY.

1st—The first meeting was held on Friday, May 22nd.—A large number of notices of eggs, taken since the beginning of the Term, showed a satisfactory amount of work. A collection of skins of Indian birds presented by H. C. Spry, Esq., was inspected by the members of the section.

2nd—JUNE 5th.—The whole time was occupied by a discussion on the habits, food, &c., of the finches.

3rd—JUNE 26th.—J. N. Atkinson read a paper on the scientific principle of the classification of birds.

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GEOLOGICAL SECTION.

As this section had, previous to Christmas, ceased to exist for some time, it was felt on its revival that it would be necessary to begin again in quite an elementary manner. Consequently, the Head of the Section, at first, mainly tried to encourage the members to go out fossil-hunting for themselves, in order that they might get some notion of *what* they wished to learn, and *how* they should set about it; and although there is not a great deal to reward the collector in the immediate neighbourhood, still a most praiseworthy amount of energy and activity was shewn. Several of the members of the section were indefatigable in their exertions, and many very good specimens of chalk fossils were brought in.

Besides the field work, there were fortnightly meetings held in the Museum; the mode of proceeding at these was to exhibit and discuss any object of interest, which had been collected since the previous meeting, and then to hear a short paper or lecture on some geological subject. The most interesting of these papers were, one on Echini, by the Rev. T. A. Preston; on the Formation of Fossils, by H. D. Drury, Esq.; on Stratification, by J. C. Brown; on Valley Formation, by W. E. Mullins, Esq.; and on Brachiopods, by the Head of the Section.

The Geological Section has also been well represented at the General Meetings, and we think it may be confidently asserted that its stall on those occasions has attracted quite its share of the attention of visitors.

Now that this section has become an established fact, it is hoped that it may have a long and successful career; we wish particularly to impress upon the members of it the importance of utilising their holidays by doing *some* field work; if every one would resolve to bring back something illustrative of the formation on which he lives, it would tend very much to guide in the choice of papers.

For the future it is intended that notice shall be given, at the conclusion of each meeting, of the paper to be read at the following meeting; and it is hoped that *all* members will employ the interval in getting up something upon the subject, so that the discussion may be fuller and more general than has hitherto been the case.

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BOTANICAL SECTION.

The meetings have been fairly attended, and the time was well occupied in the study of plants. During the Lent term the structure and functions of the root, stem, and plants, formed the main topics; and during the Midsummer term the filling of schedules. Though the actual work done at the meetings was satisfactory, yet from the fact of nothing in the way of Botany being done at other times, the progress, if any, was necessarily very slight, and the results not encouraging. The List of Notices of first flowering appears elsewhere.

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ORNITHOLOGICAL NOTICES.

The Initials given below stand for names as follows:—

E.A.	E. Acton.
J.V.A.	J. V. Agnew
L.W.A.	L. W. Andrews
R.A	R. Armitage
T.G.B.	T. G. Balfour
K.C.B.	K. C. Bellhouse
C.S.B.	C. S. Bengough
E.W.B.	E. W. Brown
A.T.B.	A. T. Burness
G.T.P.C.	G. T. P. Cambridge
H.H.C.	H. H. Champion.
R.W.C.	R. W. Cooper
G.H.D.	G. H. Dawson, Esq.
R.F.D.	R. F. Dixon
F.W.F.	F. W. Forrester
C.E.F.	C. E. Fox
R.P.B.F.	R. P. B. Frost
F.H.F.	F. H. Furnival
W.M.G.	W. M. Grove
E.H.	E. Hunter
V.H.	V. Harke
E.H.L.	E. H. Lawrie
E.S.M.	E. S. Marshall
E.P.M.	E. P. Martin
L.F.P.	L. F. Paul
R.W.R.	R. W. Rooke
G.S.	G. Sharp, Esq.
C.E.S.	C. E. Simons, Esq.
H.W.T.	H. W. Thatcher
C.H.M.T.	C. H. M. Thring
H.T.A.T.	H. T. A. Thompson
A.E.T.	A. E. Townsend
C.R.T.	C. R. Tryon
R.J.W.	R. J. Wilkinson
W.H.W.	W. H. Wilkinson
H.B.W.	H. B. Williams

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NOTICES.

Kestrel	3 eggs	May 7th	W.M.G., A.E.T.
	5 eggs h. s. ...	May 15th... ...	W.M.G., A.E.T.
	eggs	May 31st... ...	R.P.B.F., H.H.C.
Sparrow Hawk	1 egg	April 18th ...	A.E.T.
	2 eggs	May 7th	W.M.G., A.E.T.
	6 eggs	May 9th	W.M.G., A.E.T.
Long-eared Owl ...	eggs	March 19th ...	H.R.W.
	1 young bird ...	May 7th	W.M.G., A.E.T.
White Owl			
Tawny Owl ...	eggs	March 21st ...	H.R.W.
Red-backed Shrike	seen	March 17th ...	A.E.T.
	2 eggs	June 6th	E.S.M., J.V.A.
Spotted Flycatcher	seen	May 9th	A.E T.
	1 egg	May 30th ...	R.J.W.
Missel Thrush ...	nest	March 6th ...	A.E.T., L.F.P.
	eggs	March 24th ...	A.E.T.
	eggs	April 1st	C.E.S.
	eggs	April 5th	K.C.B., E.H.L.
Song Thrush ...	nest	March 19th ...	A.E.T.
	1 egg	March 23rd ...	A.E.T., L.W.A.
	eggs	March 25th ...	E.H.L.
	eggs	April 1st	V.H., L.W.A.
	nest on the ground	May 6th	A.E T.
Blackbird ...	nest	March 21st... ...	H.W.T., C.E.F.
	nest	March 21st... ...	W.M.G.
	eggs	March 30th... ...	E.H.L.
	eggs	March 31st... ...	C.E.S.
Ring Ouzel			
Hedge Accentor...	[singing after dark]	March 27th... ...	G.S.
	nest	March 30th... ...	A.E.T.
	1 egg	April 5th	A.E.T.
	2 eggs	April 8th	W.H.W.
Red-breast ...	nest	March 29th... ...	E.A.
	nest	March 30th... ...	A.E.T.
	5 eggs	April 5th	C.R.T.
	1 egg	April 7th	K.C.B., J.R.B.

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Redstart ...	1 egg	May 7th	E.A.
	2 eggs	May 9th	A.E.T., C.S.B.
Stonechat ...	seen	March 3rd	A.E.T., W.M.G.
	5 eggs	April 30th	A.E.T.
Whinchat ...	4 eggs	May 15th	W.M.G.
Wheatear ...	seen	March 14th... ...	W.M.G.
	3 eggs	May 15th	W.M.G.
	5 young birds ...	May 21st	W.M.G.
Grass-hopper Warbler ...	heard	May 6th	W.M.G., C.R.T.
	4 eggs	May 25th	E.S.M.
Sedge Warbler	1 egg	May 19th	W.M.G.
	1 egg	May 22nd	E.S.M.
	5 eggs	May 26th	E.P.M., F.W.F.
Reed Warbler...	nest	May 30th	T.G.B.
	5 eggs h. s.	June 8th	T.G.B., E.S.M.
Nightingale ...			
Blackcap... ...	5 eggs	May 31st	E.P.M.
Garden Warbler	4 eggs	June 10th	A.E.T.
Whitethroat ...	4 eggs	May 9th	R.F.D.
	eggs	May 14th	G.T.P.C.
Lesser White-throat			
Wood Warbler			
Willow Warbler	5 eggs	June 10th	A E T.
Chiff Chaff			
Golden Crested Regulus ...	9 eggs	April 17th	A.E.T
Greater Tit ...	1 egg	May 10th	K.C.B., W.H.W.
	7 eggs	May 14th	W.H.W., E.P.M.
Blue Tit	5 eggs	May 10th	K.C.B., W.H.W.
Cole Tit	2 eggs	May 19th	A.E.T.
	young	May 15th	J.V.A., E.S.M.
Long Tailed Tit	5 eggs	May 16th	E.H.
Pied Wagtail			
Grey Wagtail			
Tree Pipit			

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Meadow Pipit	3 eggs	April 30th	A.E.T.
	5 eggs h. s.	May 7th	W.M.G., A.E.T.
Skylark	5 young birds ... } 3 eggs ... ... }	May 7th	W.M.G, A.E.T.
Bunting			
Black-headed Bunting			
Yellow Bunting	3 eggs	May 15th	W.M.G.
	young birds ...	May 18th	E.S.M.
	3 eggs h. s.	July 12th	E.P.M., A E.T.
Chaffinch... ...	Building	April 10th	A.E.T.
	2 eggs	May 6th	W.M.G., C.R.T.
House Sparrow	Building	March 22nd ...	E.W.B.
Greenfinch ...	5 eggs	May 6th	W.M.G., C.R.T.
	1 egg	May 9th	K.C.B., R.W.
Hawfinch ...	seen	March 12th... ...	A.E.T., L.F.P.
Goldfinch ...	5 eggs h. s.... ...	May 6th	A.E.T., E.P.M.
Linnet	building	April 4th	W.M.G.
	4 eggs	May 16th	E.P.M., R.W.R.
	2 young birds ...	May 15th	W.M.G.
Lesser Redpole.			
Bullfinch.			
Starling	nest	March 24th... ...	W.M.G.
Carrion Crow ...	5 eggs h. s.	April 15th	A.E.T.
	5 eggs	May 6th	W.M.G., C.R.T.
Rook	5 eggs	March 11th... ...	A.E.T., L.F.P.
	eggs	March 12th... ...	A.E.T., L.F.P.
	eggs	March 14th... ...	W.M.G.
Jackdaw	building	March 29th... ...	G.H.D.
	nest lined... ...	April 3rd	L.F.P., L.W.A.
	5 eggs h. s.	May 7th	W.M.G., C.R.T.
Magpie	building	March 18th... ...	A.E.T., L.F.P.
	4 eggs	April 5th	A.E.T., L.F.P.
	7 eggs	May 15th	A.E.T.
Jay	6 eggs	May 12th	W.M.G., A E.T.
Green Woodpecker	5 eggs	May 23rd	W.M.G., A.T.B.

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Creeper	5 eggs	May 12th	K.C.B., W.H.W., B.W.
Wren	3 eggs	May 6th	W.M.G., C.R.T.
	7 eggs	May 7th	W.M.G., A.E.T.
Nuthatch ...	3 eggs	May 16th	W.M.G., A.E.T.
	5 eggs	May 17th	W.M.G.
Cuckoo	egg	May 18th	A.E.T.
	egg	May 19th	A.E.F., E.P.M.
	egg	June 10th	A.E.T.
	egg	June 12th	E.P.B.F., H.H.C.
Kingfisher ...	building	March 25th	G. Hillier, junr.
	4 eggs	May 30th	W.M.G., A.E.T.
Swallow	4 seen	March 22nd ...	G.H.D., G.S.
	1 seen	March 27th	E.H.H.
	,,	March 29th	Mr. Coleman
	building	May 11th	A.E.T.
Martin	seen	March 29th	Mr. Coleman.
	1 egg	May 21st	C.H.M.T.
Sand Martin			
Swift	seen	May 6th	R.W.C.
Goatsucker			
Ring Dove ...	1 egg	April 3rd	E.A.
	2 eggs	April 4th	C.S.B.
	2 eggs	April 5th	K.C.B., E.H.L.
	2 young	April 18th	A.E.T.
Stock Dove ...	2 eggs	March 29th	Mr. Coleman.
Turtle Dove ...	1 egg	May 31st	H.T.A.T.
	2 eggs	June 10th	A.E.T.
Pheasant			
Partridge			
Quail			
Peewit	4 eggs	March 31st	W.M.G.
	4 eggs	April 5th	R.A.
	5 eggs	April 6th	F.H.F.
Landrail	young	June 14th	C.S.B.
Water Rail			
Moorhen	6 eggs	May 6th	A.E.T., E.P.M.

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Coot...	eggs	May 30th	A.E.T.
Wild Duck ...	seen	April 3rd	E.W.B.
Little Grebe ...			
Golden Plover	large flock seen flying over Marlboro u gh	March 9th	Mr. Coleman.
Stone Curlew ...	1 egg	May 17th	W.M.G.

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ENTOMOLOGICAL LIST.

ALTHOUGH the Society does not at present possess an organised Entomological Section, it is nevertheless not destitute of entomologists, and a fair list of notices has been collected. More than thirty species are new to the district, chiefly, of course, Micros, and some interesting rarities have also been observed. *A. Iris* and *L. Sibylla* have been turned up not uncommonly, having previously only occurred singly. The fourth larva of *Acronycta Alni* that has been found here has been taken at Ramsbury, but not reared. *Geometra Papilionaria*, the large Emerald, has been previously reported, but not authenticated; nor indeed are these two specimens so, they are therefore only inserted provisionally. I am not aware that *Glyphipterys Cladiella* has previously been recorded elsewhere than from the Cambridge Fens.

Sufficient data have not been collected this season to record the *duration* of appearance of the different species; the first dates therefore alone are recorded. New species are denoted by small capitals. Localities are given only when new.

The undermentioned are the names symbolised by the initials in the following list; where no initial is added, I am myself responsible.

R. A.	R. Armitage.
J. A.	J. Arnold.
H. B.	H. Bond.
F. M. D;	F. M. Drysdale.
H. E.	H. Everingham.
R. F.	R. Farrar.
C. F. P. F.	C. F. P. Froom.
H. G.	H. Going.
A. K.	A. Kensington.
E. L.	E. Langton.
F. H. L.	F. H. Lee.
N. M.	N. Manders.
E. M.	E. Martin.
W. E. M.	W. E. Murphy.
R. De C. P.	R. De C. Peele.
T. A. P.	Rev. T. A. Preston.
D. P.	D. Preston.
A. E. T.	A. E. Townsend.
A. P. W.	A. P. Wickham.
J. E. W.	J. E. Williams.

E. MEYRICK.

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RHOPALOCERA.

Gonepteryx Rhamni	Mar. 5, N.M., and Aug. 41
Pieris Brassicae	A. 5th, N. M.
P. Rapæ	A. 16th, N. M.
P. Napi	A. 21st, N. M.
Anthocharis Cardamines	A. 22nd, N. M.
Arge Galathea	July 7th, N. M.
Lasiommata Ægeria	A. 30th, N. M.
L. Megæra	May 16th, A. E. T.
Hipparchia Semele	July 15th, E. J. W.
H. Janira	June 8th, E. J. W.
H. Tithonus	July 6th, W. E. M.
H. Hyperanthus	June 22nd, A. E. T.
Cœnonympha Pamphilus	May 16th, N. M.
Limenitis Sibilla ... Stype Wood	July 4th, N. M.
Apatura Iris ... ... Stype Wood	July 11th, N. M.
Cynthia Cardui	July 8th, E. M.
Vanessa Atalanta	June 10th, A. E. T.
V. Io	A. 20, A. E. T., and Jy. 23.
V. Polychloros	A. 20, N. M., and Jy. 15.
V. Urticæ	A. 15th, N. M.
Argynnis Paphia	July 4th, N. M.
A. Aglaia	June 27th, F. M. D.
A. Adippe	June 27th, F. M. D.
A. Selene	May 26th, A. E. T.
A. Euphrosyne	May 24th, N. M.
Nemeobius Lucina	June 2nd. A. E. T.
Thecla Quercus	July 17th, N. M.
T. Betulæ	July 31st, N. M.
T. W-Album ... ... Stype, Marlboro', and Thrup	July 7th, N. M.
T. Rubi	May 23rd, N. M.
Chrysophanus Phlæas	May 9th, N. M.
Polyommatus Argiolus	June 22nd, N. M.
P. Alsus	May 25th, A. E. T.
P. Corydon	July 4th, T. A. P.
P. Alexis	May 30th, H. B.
P. Agestis	July 4th, A. E. T.
Thymele Alveolus	A. 25th, N. M.
Thanaos Tages	May 9th, N. M.
Pamphila Linea	June 27th, A. E. T.
P. Sylvanus	June 2nd, C. F. P. F.

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SPHINGINA.

Procris Geryon	.. ..	May 25th, H. B.
Anthrocera Filipendulæ	... ...	July 4th, A. E. T.
Smerinthus Ocellatus ...	... ...	June 5th, *Mr. Coleman*.
S. Populi	second brood (?) ...	July 15th, F. M. D.
S. Tiliæ	... ...	May 15th, N. M.
Sphinx Ligustri	... ...	May 24th, N. M.
Chærocampa Elpenor ...	... ...	June 3rd, N. M.
C. Porcellus	... ...	June 7th, A. E. T.
Macroglossa Stellatarum	... ...	May 15th, N. M.

BOMBYCINA.

Hepialus Humuli ...	... ...	July 18th, F. M. D.
H. Lupulinus	... ...	May 27th, C. F. P. F.
H. Sylvinus	... ...	July 30th.
Cossus Ligniperda ...	... ...	July 20th, H. E.
Notodonta Camelina ...	... ...	June 14th, R. A.
Diloba Cæruleocephala ...	... ...	larvæ, Jn. 3rd, W.E.M.
Pygæra Bucephala ...	... ...	May 19th, N. M.
Orgyia Antiqua	... ...	larvæ, July 30th, N.M.
Porthesia Auriflua ...	... ...	July 8th, H. B.
Miltochrista Miniata ...	Thrup Wood	July 3rd.
Lithosia Complanula ...	... ...	July 21st.
Arctia Caja	... ...	June 14th, E. J. W.
Nemeophila Plantaginis ..	... ...	May 24th, H. B.
Diaphora Mendica ...	... ...	June 19th, A. P. W.
Spilosoma Menthastri ...	... ...	May 18th, C. F. P. F.
S. Lubricipeda	... ...	May 24th, R. F.
Callimorpha Jacobææ ...	... ...	May 6th, N. M.
Lasiocampa Quercus ...	... ...	July 8th, E. L.
Clisiocampa Neustria ...	Ramsbury, at light ...	July 14th.
Odonestis Potatoria ...	... ...	July 10th, H. E.
Platypteryx Lacertinaria	... ...	bred, May 5th.
Fumea Nitidella ...	Henswood	cases, June 26th.

NOCTUINA.

Acronycta Tridens ...	... ...	bred, June 29th.
A. Psi	... ...	June 6th, A. E. T.
A. Alni	fed on walnut; since died	larva, August 1st.
Leucania Conigera ...	... ...	July 6th.
L. Lithargyria	... ...	July 6th.
L. Pallens	... ...	June 29th.

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Xylophasia Polyodon		June 20th, A. K.
Mamestra Brassicæ		May 18th, N. M.
Apamea Unanimis		bred, May 25th.
A. Basilinea		June 16th, A. P. W.
A. Oculea		June 8th, A. K.
Miana Strigilis		July 6th.
Grammesia Trilinea		June 8th, A. K.
Caradrina Alsines	at light	July 6th.
C. Blanda	at light	July 6th.
C. Cubicularis		July 30th.
Agrotis Exclamationis		June 14th, F. H. L.
A. Cortices		July 6th.
Triphæna Pronuba		June 5th, N. M.
Noctua Triangulum	Ramsbury	July 6th.
Cosmia Trapezina		July 31st.
Eremobia Ochroleuca	Henswood	August 6th.
Hadena Oleracea		July 4th.
Xylocampa Lithorhiza	at light	A. 3rd.
Abrostola Triplasia		July 6th.
Plusia Chrysitis		June 28th, H. E.
P. Gamma		June 19th, C. F. P. F.
Gonoptera Libatrix		January 15th, N. M.
Catocala Nupta	Froxfield	August 17th.

GEOMETRINA.

Ourapteryx Sambucaria		July 6th, W. E. M.
Rumia Cratægata		A. 30th, N. M.
Metrocampa Margaritata		June 19th, N. M.
Selenia Illunaria		July 11th.
S. Lunaria		June 10th, A. P. W.
Amphidasis Betularia		bred, May 22; Jn. 13, H. E.
Boarmia Rhomboidaria		July 14th.
Tephrosia Laricaria		A. 1st.
Geometra Papilionaria (?)	Marlborough, at light	July 3rd, *Mr. Coleman.*
Iodis Lactearia		May 30th, N. M.
Phorodesma Bajularia (?)	Marlborough	July 3rd, *Mr. Coleman.*
Hemithea Thymiaria		June 21st.
Ephyra Punctaria	Henswood	August 7th.
Acidalia Scutulata		June 30th.
A. Bisetata		June 24th.
A. Aversata		June 24th.
Bradyepetes Amataria		July 6th.

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Halia Wavaria	July 5th.
Strenia Clathrata	A. 22nd, N. M.
Fidonia Atomaria	June 4th, N. M.
F. Piniaria	June 12th, R. De C. P.
Abraxas Grossulariata	July 2nd, E. M.
A. Ulmata	June 13th, D. P.
Lomaspilis Marginata	June 21st.
Larentia Didymata	June 22nd.
L. Miaria	May 28th, A. E. T.
L. Olivaria (?)	May 12th, N. M.
Emmelesia Alchemillata Ramsbury	July 6th.
Melanthia Rubiginata	July 6th.
M. Albicillata	July 3rd.
Melanippe Hastata	June 9th, H. G.
M. Fluctuata	A. 20th, N. M.
Camptogramma Bilineata	July 4th, C. E. B. O.
Scotosia Rhamnata	July 11th.
Cidaria Picata	June 28th.
C. Russata	June 5th, A. K.
C. Immanata	July 11th.
C. Prunata	July 15th.
C. Fulvata	June 30th.
C. Dotata	July 1st.
Eubolia Mensuraria	July 22nd.
E. Bipunctaria ... Bedwyn, Marlborough, &c.	Jy. 4, C.E.B.O.—Aug 2.
Odezia Chærophyllata	June 16th, J. A.

PYRALIDINA.

Hypena Proboscidalis	June 23rd, E. M.
Rivula Sericealis	July 25th.
Herminia Tarsipennalis	July 6th.
Aglossa Pinguinalis	June 29th.
Pyrausta Purpuralis	July 4th, C. E. B. O.
Botys Verticalis	July 21st.
B. Fuscalis	July 8th.
B. Urticata	June 1st, N. M.
Spilodes Cinctalis	June 23rd.
Scopula Olivalis	June 22nd.
S. Prunalis	July 5th.
Eudorea Crataegella ... Ramsbury, at light ...	July 6th.
E. Resinea ... ... Knighton	June 29th.
Aphomia Colonella	June 24th.

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Homœosoma Nebulella...	... ...	July 6th.
Acrobasis Tumidella ...	Thrup, &c.	July 11th.
Nephopteryx Roborella...	Henswood	August 3rd.
CRAMBUS FALSELLUS ...	Ramsbury, at light ...	July 6th.
C. Pascuellus	... ...	June 25th.
C. Culmellus	... ...	July 9th.
C. Inquinatellus	... ...	July 18th.
C. Tristellus	... ...	July 30th.

TORTRICINA.

Hypermecia Augustana	... ...	June 29th.
Antithesia Betuletana ...	... ...	August 11th.
A. Ochroleucana ...	... ...	July 8th.
A. Marginana	... ...	bred, May 7th.
A. Gentianana	... ...	bred, June 1st.
A. Ustulana	Thrup Wood	July 6th.
Tortrix Viridana ...	... ...	June 24th.
T. Forsterana	... ...	July 1st.
T. Ribeana	... ...	June 28th.
T. Corylana	Henswood	August 11th.
Lozotænia Sorbiana ...	Boltsridge	June 25th.
L. COSTANA	Knighton	July 4th.
L. Unifasciana	... ...	June 29th.
L. Fulvana	... ...	July 5th.
L. Roborana	Thrup Wood	July 5th.
L. Xylosteana	... ...	July 10th.
L. Rosana	... ...	July 8th.
Ptycholoma Lecheana ...	... ...	June 28th.
Spilonota Roborana ...	... ...	July 3rd.
Lithographia Penkleriana	... ...	July 1st.
Phlœodes Tetraquetrana	Bedwyn Brails ...	June 28th.
Pœdisca Solandriana ...	... ...	July 23rd.
CATOPTRIA HOHENWARTHIANA	Thrup Wood	July 5th.
Halonota Bimaculana ...	Bedwyn Brails ...	June 28th.
H. CIRSIANA	Bedwyn Brails ...	June 28th.
Dicrorampha Petiverella	... ...	June 30th.
D. Sequana	... ...	June 28th.
Coccyx Hyrciniana ...	... ...	June 25th.
Hedya Ocellana	... ...	July 8th.
H. Dealbana	... ...	July 5th.
Steganoptycha Nœvana	... ...	July 21st.
Anchylopera Diminutana	Knighton	July 4th.

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A. Lundana	... ...	August 3rd.
Bactra Lanceolana ...	... ...	June 20th.
B. Furfurana	Bedwyn	June 28th.
Peronea Comparana ...	... ...	August 12th.
P. Variegana	... ...	July 21st.
Paramesia Aspersana ...	... ...	July 26th.
Pœcilochroma Corticana	... ...	June 29th.
Anisotænia Ulmana ...	Boltsridge	June 29th.
Semasia Spiniana ...	Thrup	August 9th.
S. Wœberana	... ...	July 4th.
S. Nanana	... ...	July 11th.
Stigmonota Nitidana ...	Thrup Wood	July 3rd.
Retinia Buoliana ...	... ...	bred, July 21st.
R. Pinivorana	... ...	July 7th.
Endopisa Proximana ...	Knighton	July 12th.
Carpocapsa Splendana ...	Thrup Wood	July 29th.
C. Pomonella	... ...	June 30th.
Argyrolepia Cnicana ...	Bedwyn Brails, Thrup	June 18th.
Eupœcilia Notulana ...	Boltsridge, Eastridge	June 30th.
E. Roseana	Bedwyn Brails ...	larvæ, A. 5th.

TINEINA.

Tinea Arcella	... ...	July 6th.
T. Cloacella	... ...	June 24th.
T. Pellionella	... ...	June 24th.
T. Lapella	Thrup Wood	July 5th.
T. Semifulvella	... ...	July 1st.
Lampronia Prælatella ...	Bedwyn Brails ...	June 18th.
Nemophora Metaxella	Ramsbury Plantation	June 24th.
Micropteryx Purpurella	Loves Wood	A. 6th.
M. Salopiella	Loves Wood	A. 6th.
M. Semipurpurella ...	Loves Wood	A. 6th.
M. Unimaculella ...	Loves Wood, Manton Copse	A. 8th.
M. Subpurpurella ...	... ...	A. 6th.
Swammerdamia Cæsiella	... ...	July 9th.
S. Lutarea	... ...	July 6th.
Hyponomeuta Plumbellus	... ...	July 15th.
H. Evonymellus... ...	... ...	August 1st.
Cerostoma Radiatella ...	... ...	August 4th.
C. Costella	... ...	August 4th.
C. Alpella	Henswood	August 7th.
C. Xylostella	... ...	July 4th.

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Phibalocera Quercana ...	... ...	July 11th.
Depressaria Hypericella	Bedwyn Brails ...	August 5th.
Gelechia Rufescens ...	... ...	July 2nd.
G. Affinis	... ...	June 29th.
G. Domestica	... ...	July 1st.
G. Proximella	Bedwyn Brails ...	June 18th.
G. Tricolorella	Knighton	larvæ, A. 5th.
G. Sequax	Thrup Wood	July 2nd.
G. Tenebrella	Chisbury	June 18th.
G. Bifractella	Stype Wood	August 11th.
G. Gemmella	... ...	August 6th.
Chelaria Hubnerella ...	... ...	August 8th.
Œcophora Tinctella ...	... ...	June 14th.
Butalis Senescens ...	Bedwyn Brails ...	June 18th.
Glyphipteryx Cladiella	Knighton	June 22nd.
G. Thrasonella ...	Knighton	June 22nd.
Argyresthia Nitidella ...	... ...	June 25th.
A. Albistria	... ...	June 28th.
A. Pygmæella	Spring's Hill	June 16th.
Ocnerostoma Piniariella	... ...	June 21st.
Gracilaria Tringipennella	... ...	June 16th.
Coleophora Laricella ...	... ...	June 21st.
C. Lutipennella ...	... ...	July 23rd.
C. Fuscedinella	... ...	July 15th.
C. Siccipolia	Knighton	June 16th.
C. Albitarsella	Ramsbury, Mildenhall	larvæ, A. 10th.
C. Fabriciella	Ramsbury, at light ...	July 6th.
C. Palliatella ...	Thrup Wood	July 4th.
C. Lixella	Marlborough, at light	June 18th.
C. Troglodytella ...	Knighton	larvæ, June 5th.
C. Annulatella	... ...	July 8th.
C. Cæspititiella	... ...	June 18th.
Laverna Lactella ...	Boltsridge	June 25th.
L. Miscella	Loves Wood	larvæ, June 5th.
L. Phragmitella ...	Chilton	bred, August 3rd.
L. Atra	Ramsbury, at light ...	July 6th.
Elachista Albifrontella ...	... ...	June 22nd.
E. Gleichenella ...	Eastridge	June 19th.
E. Cinereopunctella ...	Spring's Hill	June 15th.
E. Luticomella	Boltsridge	June 21st.
E. Bedellella	... ...	June 15th.

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E. GANGABELLA	Eastridge ...	...	June 19th.
Lithocolletis Cramerella	... ...	...	August 2nd.
L. HEEGERIELLA ...	Boltsridge ...	...	June 16th.
L. Quercifoliella ...	... ...	...	August 2nd.
Cemiostoma Laburnella	... ...	...	July 5th.
BUCCULATRIX AURIMACULELLA	Bedwyn Brails	...	June 14th.
B. CRATÆGI	Marlborough	...	June 6th.

ADDENDA.

PERONEA UMBRANA ...	Aldbourne Gorse	...	Sept. 14th

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BOTANICAL NOTICES.

A very fairly complete list of notices has been obtained during the past year, mainly through the aid of Rev. G. W. De Lisle, Rev. C. E. Thorpe and W. M. H. Milner. The break of the Easter Holidays would have been of serious moment had not Mr. Thorpe kindly observed all plants coming into flower. Various circumstances have combined to prevent as much aid as usual from members of the School, and doubtful dates have been included in brackets. As usual "by" before a date indicates that the specimen had apparently been out a day or two before being observed, and an asterisk (*) indicates cultivated specimens.

Names of those whose initials occur in the following List:

G.R.A.	G. R. Askwith
T.G.B.	T. G. Balfour
J.C.B.	J. C. Brown
G.W.D.L.	Rev. G. W. De Lisle
F.M.D.	F. M. Drysdale
H.W.E.	H. W. Everingham
A.W.F.	A. W. Flux
K.G.	Miss K. Gwillim
F.G.H....	F. G. Heaven
W.G.H.	W. G. Hughes
J.B.K.	J. B. Kite
G.A.L.	G. A. Lefroy
N.M.	N. Manders
W.M.H.M.	W. M. H. Milner
D.E.O.	D. E. Olivier
L.F.P.	L. F. Paul
R.D.P.	R. D. Peele
E.P.	Miss E. Preston
F.S.	F. Storr, Esq.
H.W.T.	H. W. Thatcher
P.T.	P. Thicknesse
F.E.T.	F. E. Thompson, Esq.
C.E.T.	Rev. C. E. Thorpe
C.H.M.T.	C. H. M. Thring
A.E.T.	A. E. Townsend
K.W.	K. Ward
J.E.W.	J. E. Williams
P.W.	P. Woolley

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Clematis—
vitalba... ... full bud, July 11th, G.W.D.L.; Aug. 3, (Tedworth).
Thalictrum—
flavum... ... June 16.
Anemone—
nemorosa ... February 27.
*apennina ... March 22.
*hepatica ... January 21.
Ranunculus—
pseudo-fluitans April 21, C.E.T.
peltatus ... [May 16, H.W.T.]
flammula ... May 30 (Chilton)
ficaria ... ... Jan. 26, F.E.T.; Feb. 2.
auricomus ... April 5, J.C.B. and J.B.K.
acris ... ... April 7, G.W.D.L. and F.E.T.
repens ... ... Jan. 28; March 26, G.W.D.L.
bulbosus ... Mar. 26, G.W.D.L.
arvensis ... May 12, F.E.T.
*parviflorus ... May 7.
Caltha—
palustris ... March 19, F.E.T.
Eranthis—
*hyemalis ... January 15.
Helleborus ...
viridis ... ... bud Jan. 26, Feb. 24.
Aquilegia—
*vulgaris ... May 15, F.E.T.
Berberis ... ...
*fascicularis... May 1, C.E.T.
Papaver—
Rhœas... ... June 6.
Chelidonium—
majus ... ... April 28, C.E.T.
Corydalis—
*solida ... ... March 9.
Fumaria—
officinalis ... [May 6.]
Dielytra—
*spectabilis ... May 7.
Nasturtium—
officinale ... May 30 (Chilton); June 12.
Barbarea—
vulgaris ... April 30, C.E.T.
Cardamine—
sylvatica ... May 5.
hirsuta ... February 8.
pratensis ... cold. bud, Mar. 26; April 13, C.E.T.
Sisymbrium—
officinale ... May 9.
thalianum ... April 22, C.E.T.
Alliaria—
officinalis ... Ap. 16, C.E.T. (Ap. 5, bud, F.E.T.)
Brassica—
*oleracea ... May 4.
rapa ... ... April 5, F.E.T.
Sinapis—
arvensis ... April 5, F.E.T.
alba ... ... [May 26.]
Alyssum—
calycinum ... March 28, F.E.T.
Aubrietia—
*purpurea ... January 21.
Draba—
verna ... ... March 4, G.W.D.L.
Armoracia—
*rusticana ... June 16.
Thlaspi—
arvense ... *March 30.
Lepidium—
campestre ... May 6, G.W.D.L.
Capsella—
Bursa-pastoris March 3, 24.
Senebiera—

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coronopus ... May 9.
Raphanus—
Raphanistrum [by June 12.]
Reseda—
lutea ... ... May 23, W.M.H.M. and T.G.B.
Helianthemum—
vulgare ... May 1, C.E.T.; May 5, 8.
Viola—
odorata ... *Jan 27; March 3, P.T.
hirta ... ... March 8, F.G.H.; March 14.
Riviniana ... March 18, A.E.T. and L.F.P.
canina ... ... May 7.
tricolor ... [May 7.]
(var) arvensis March 24.
Polygala—
vulgaris ... April 26, C.E.T.
Saponaria—
officinalis ... *Aug. 2.
Silene—
inflata ... ... June 6.
Lychnis—
flos-cuculi ... *May 15.
vespertina ... *May 15, May 26.
diurna ... ... April 28, C.E.T.
Githago ... June 27, H.W.T.
agina—
procumbens... May 12.
Arenaria—
trinervis ... April 24, C.E.T.
serpyllifolia .. May 12.
Stellaria—
media .. ... all year.
Holostea ... April 1, G.W.D.L.
graminea ... [June 6.]
uliginosa ... full, May 12, F.E.T.
Cerastium—
glomeratum April 5, F.E.T.
triviale .. ... March 3, 26.
Malva—
moschata ... June 23, G.W.D.L.
sylvestris ... June 5, A.W.F.
rotundifolia [by June 16.]
Tilia—
parvifolia ... in flower, July 4.
Hypericum—
quadrangulum July 22.
perforatum ... July 5, G.W.D.L.
hirsutum ... June 25, F..
pulchrum ... July 4, W.M.H.M.
Acer—
campestre ... Ap. 29, C.E.T.
Pseudo-platanus Ap. 22, C.E.T.
Æsculus—
Hippocastanum Ap. 26, C.E.T.
Geranium—
*Phæum ... May 7, full May 11, G.W.D.L.
pratense ... May 31, W.M.H.M.
dissectum ... May 15.
columbinum May 31.
molle ... ... Ap. 24, C.E.T.
lucidum ... Ap. 26, C.E.T.
Robertianum Ap. 28, C.E.T.
*pyrenaicum May 7.
Erodium—
cicutarium ... *Mar. 30.
Linum—
Catharticum May 15, F.E.T.
Oxalis—
acetosella ... Ap. 18, C.E.T.
Euonymus—
Europæus ... May 23, W.M.H.M.
Staphylea—
*pinnata ... by May 7, over May 26.
Rhamnus—
catharticus ... May 23, W.M.H.M.

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Ulex—
Europæus ... all the year.
Sarothamnus—
scoparius ... Ap. 5, F.E.T.
Ononis—
arvensis ... July 1, G.W.D.L.
campestris .. by July 4.
Medicago—
lupulina ... Ap. 5, F.E.T.
Trifolium—
pratense ... Ap. 26, C.E.T.
*incarnatum May 24, C.H.M.T.
hybridum ... by June 12.
repens ... ... May 6, W.M.H.M. May 26.
procumbens June 6.
minus ... ... May 6, W.M.H.M.
Lotus—
corniculatus May 10, W.M.H.M.
major ... ... by July 4.
Anthyllis—
vulneraria ... May 10, G.W.D.L.
Vicia—
hirsuta... ... Ap. 28, C.E.T.
sylvatica ... full June 24, F.S.
cracca ... ... June 12.
sepium... ... Ap. 22, C.E.T.
sativa ... ... May 4.
Lathyrus—
pratensis ... May 15, G.W.D.L.
macrorhizus Ap. 16, C.E.T.
Hippocrepis—
comosa ... May 12, F.E.T.
Onobrychis—
sativa ... ... May 19, H.W.T.
Cytisus—
*Laburnum... May 5.
Prunus—
spinosa ... Mar. 15, P.T. & A.E.T.
*Padus... ... full May 4.
[illegible] ... full Ap. 6.
Spiræa—
ulmaria ... June 12, W.M.H.M.
Poterium—
Sanguisorba May 1, C E.T.
Agrimonia—
eupatoria ... June 12, K.W., June 26, G.W.D.L.
Alchemilla—
vulgaris ... May 11, G.W.D.L.
arvensis ... Ap. 5, F.E.T.
Sibbaldia—
*procumbens by May 7.
Potentilla—
anserina ... May 9.
reptans ... May 25, C.E.T.
Tormentilla... May 7.
fragariastrum Jan. 26.
Fragaria—
vesca ... ... Ap. 24, C.E.T.
Rubus—
Idæus ... ... May 26.
discolor ... June 30.
corylifolius ? June 12.
cæsius ... ... May 16th, F.G.H.
Geum—
urbanum ... *Mar. 30, Ap. 28, C.E.T.
rivale ... ... Ap. 22, C.E.T.
Rosa—
tomentosa ... June 28, F.S.
canina ... ... June 5.
arvensis ... June 12, W.M.H.M.
Cratægus—
oxyacantha... May 3, C.E.T.
Pyrus—
malus ... ... Ap. 28, C.E.T.
*aucuparia ... May 10, F.G.H.
*Japonica ... by Feb. 7.
Epilobium—
hirsutum ... June 27.

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angustifolium *July 4.
parviflorum... July 11, G.W.D.L.
montanum ... June 12.

Circæa—
lutetiana ... July 4.

Bryonia—
dioica ... ... June 7, F.E.T.

Spergula—
arvensis ... [June 12.]

Scleranthus ...
annuus... ... [July 4.]

Sedum—
album ... ... *June 14.
acre ... ... June 5, A.W.F.

Sempervivum—
tectorum ... *about July 17.

Ribes—
grossularia ... March 19, F.E.T.
rubrum ... Ap. 5, F.E.T.
nigrum ... Ap. 13, C.E.T.
*sanguineum... March 22.

Saxifraga—
*cæspitosa ... Mar. 24, G.W.D.L.
*oppositifola... Feb. 8, (cold. bud).
*crassifolia ... March 19.
tridactylites... Ap. 22, C.E.T.
granulata ... Ap. 22, C.E.T.

Chrysosplenium—
oppositifolium Ap. 5, F.E T.

Philadelphus—
*Coronarius ... by May 30.

Sanicula—
Europæa ... May 6.

Helosciadium—
nodiflorum ... June 30,

Ægopodium—
podagraria ... May 11, G.W.D.L.; May 15, F.E.T.

Bunium—
flexuosum ... May 10, W.M.H.M.

Pimpinella—
saxifraga ... June 30.

Sium—
angustifolium by July 22.

Œnanthe—
crocata ... May 30.

Æthusa—
cynapium ... May 4, F.S.

Silaus—
pratensis ... May 23, W.M.H.M.

Angelica—
sylvestris ... July 22.

Pastinaca—
sativa ... ... Ap. 13, C.E.T.

Heracleum—
sphondylium.. May 15.

Daucus—
carota ... ... June 6.

Torilis—
Anthriscus ... June 30.
infesta... ... July 4.

Scandix—
pecten ... ... (Feb. 1, 5); Ap. 29, C.F.T.

Anthriscus—
sylvestris ... Feb.24, P.T.; Mar. 4, 19, F.E.T.

Chærophyllum—
temulum ... May 9.

Adoxa—
moschatellina Mar. 4, G.W.D.L.

Cornus—
sanguinea ... June 6.
*mascula ... Feb. 1.

Sambucus—
nigra ... ... nearly out May 23; May 26.

Viburnum—
lantana ... Ap. 8, C.E.T.
opulus ... ... nearly out May 23.
*Laurustinus... by Jan. 15; Feb. 7.

Lonicera—

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*caprifolium .. May 30, (full).
Periclymenum May 30, J B.K.
Symphoricarpos—
*racemosus ... June 6.
Sherardia—
arvensis ... Ap. 21, C.E.T.
Asperula—
cynanchica ... full July 4.
odorata ... May 5.
Galium—
cruciatum ... Ap. 26, C.E.T.
Aparine ... May 5.
Mollugo ... June 12; June 30.
verum ... ... cold. bud June 16; June 30.
saxatile ... June 12.
palustre ... June 16.
Valeriana—
officinalis ... June 12.
dioica ... ... May 5.
Valerianella—
olitoria .. ... May 7, G.W.D.L.
Dipsacus—
sylvestris ... by July 22.
Knautia—
arvensis ... May 12.
Scabiosa—
columbaria ... June 12, G.R.A.
Eupatorium—
cannabinum *by July 30.
Petasites—
vulgaris ... Feb. 18, A.E.T.
Tussilago—
Farfara ... Feb. 4; W.M.H.M. Feb. 12.
Bellis—
perennis ... all the year.
Achillea—
Millefolium... May 25, G.R.A.
Anthemis—
arvensis ... June 6.
cotula ... ... June 12.
Matricaria—
inodora ... Feb. 1, &c., Ap. 4, May 18.
Chrysanthemum
Leucanthemum May17, W.M.H.M.
segetum ... fullJuly4, W.M.H.M.
Gnaphalium—
uliginosum ... by July 4.
Doronicum—
*plantagineum Mar. 30.
Senecio—
vulgaris ... all the year.
Jacobæa ... June 14, A.W.F; June 29, G.W.D.L.
aquaticus ... June 30.
campestris ... May 19.
Arctium—
intermedium by July 22, R.D.P.
Centaurea—
nigra ... ... June 12, 30.
cyanus ... June 28, F.S.
scabiosa ... June 12, 14.
Carduus—
nutans... ... My.12,F.E.T.; Jn.12
crispus... ... May 12, F.E.T.
lanceolatus ... July 4, W.M.H.M. July 22.
arvensis ... July 4.
palustris ... May 31, F.G.H.
acaulis... ... June 30, G.W.D.L.
Lapsana—
communis ... June 6, 12.
Cichorium—
Intybus ... by June 28, F.S.
Hypochœris—
radicata ... May 31, F.G.H.
Apargia—
hispida ... May 26.
autumnalis ... Jn.12,17, G.W.D.L.
var. pratensis May 23, W.M.H.M.

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Tragopogon—
minor ... ... May 30.
Helminthia—
echioides ... * by July 30.
Leontodon—
taraxacum ... all the year.
Sonchus—
oleraceus ... June 12.
asper ... ... May 15.
Crepis—
virens ... ... May 25, C.E.T., May 31.
Hieracium—
pilosella ... May 5, C.E.T.
Phyteuma
orbiculare ... full by July 31.
Campanula—
glomerata ... June 12.
rotundifolia .. July 4, 11, W.M.H.M.
Specularia—
hybrida ... May 26.
Ilex—
aquifolium ... bud, Ap. 5, F.E.T.; May 6, W.M.H.M.
Ligustrum—
vulgare ... June 12.
Fraxinus—
excelsior ... Ap. 21, C.E.T.
Syringa—
*vulgaris ... Ap. 25, C.E.T.
Vinca—
minor .. ... * Jan. 27.
major ... ... * Jan. 28, Ap. 30, C.E.T.
Erythræa—
centaurium ... July 4, W.M.H.M.
Menyanthes—
trifoliata ... full May 27, F.M.D.
Polemonium—
cæruleum ... * May 10.
Convolvulus—
arvensis ... June 12; June 17, G.W.D.L.
sepium... ... * June 11, July 10, G.W.D.L.
Cynoglossum—
officinale ... May 26, E.P.
Lycopsis—
arvensis ... July 4, W.M.H.M.
Symphytum—
officinale ... Ap. 24, C.E.T.
asperrimum full My. 24, W.M.H.M.
Echium—
vulgare ... June 21, J.E.W.
Pulmonaria—
* officinalis ... Feb. 23.
Lithospermum—
officinale ... May 9.
arvense ... May 3, C.E.T.
Myosotis—
palustris ... May 30, (Chilton) June 12.
arvensis ... Ap. 24, C.E.T.
collina ... ... Ap. 5, F.E.T.
versicolor ... * May 10.
Solanum—
Dulcamara ... June 12; June 17, G.W.D.L.
Atropa—
* Belladonna May 10.
Hyoscyamus—
niger ... ... June 12.
Lycium—
* barbarum... May 6, W.M.H.M.
Orobanche—
minor ... ... June 5, A.W.F.
Lathræa—
squamaria ... Ap. 3, P.T.&E.W.
Verbascum—
Thapsus ... June 30.
Linaria—
cymbalaria ... Ap. 22, C.E.T.

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minor ... ... May 29, G.W.D.L.
vulgaris ... Jn.23,D.E.O.,G.A.L.
Scrophularia—
nodosa... ... May 26.
aquatica ... June 12.
*vernalis .. full May 7,
Melampyrum—
pratense ... May 18, C.E.T.
Pedicularis—
sylvatica ... May 1, C.E.T.
Rhinanthus—
Crista-galli ... May 14, G.W.D.L.
Euphrasia—
officinalis .. July 6, G.W.D.L., July 31.
odontites ... June 12, W.M.H.M.
Veronica—
Anagallis ... June 12.
Beccabunga May 31, W.M.H.M.
Chamædrys... March 24, Ap. 1.
montana ... full May 30.
officinalis ... June 12.
serpyllifolia .. Ap. 5, F.E.T.
arvensis ... May 12.
agrestis ... Ap. 1.
polita ... ... all the year.
Buxbaumii ... all the year.
hederifolia ... all the year.
Mentha—
rotundifolia *July 30.
aquatica ... July 22, R.D.P.
arvensis ... July 31.
Scutellaria—
galericulata... by Jy. 4, G.W.D.L.
Salvia—
verbenaca ... by May 30.
Thymus—
serpyllum ... May 31, W.M.H.M.
Calamintha—
officinalis ... *about July 13.
acinos ... ... July 6, G.W.D.L.
clinopodium... July 12.
Prunella—
vulgaris ... June 12, P.W.
Nepeta—
Glechoma ... Mar. 6, G.W.D.L.; Mar. 17, F.E.T.
Lamium—
amplexicaule all the year.
purpureum ... all the year.
album ... ... all the year.
*maculatum ... January 21.
Galeobdolon April 16, C.E.T.
Galeopsis—
Ladanum ... July 31.
Tetrahit ... July 4.
Stachys—
Betonica ... July 6, G.W.D.L.
sylvatica ... June 6.
palustris ... July 12.
Ballota—
fœtida ... ... June 20, G.W.D.L.
Ajuga—
reptans ... April 27, C.E.T.
Verbena—
officinalis ... July 22.
Primula—
vulgaris ... all the year to June 12.
veris ... ... April 5, F.E.T.
Lysimachia—
Nummularia *June 30.
nemorum ... May 18, G.W.D.L.
Anagallis—
arvensis ... June 6.
Plantago—
laceolata ... bud, April 5; April 18, C.E.T.
media ... ... May 12, F.E.T.
major ... ... June 6.
Chenopodium—
album ... ... July 4, W.M.H.M.

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Bonus-Henricus May 9.
Rumex—
sanguineus ... June 12.
conglomeratus June 27.
obtusifolius... June 6.
crispus... ... April 30, C.E.T.; June 6.
Hydrolapathum July 22.
acetosa ... April 30, C.E.T.
acetosella ... April 26, C.E.T.
Polygonum—
Bistorta ... May 28, H.W.E.
amphibium ... June 12.
Persicaria ... July 1, G.W.D.L.
aviculare ... June 12.
convolvulus June 30.
Daphne—
*mezereum ... January 21.
Laureola ... January 21.
Buxus—
sempervirens Mar. 14, G.W.D.L.
Euphorbia—
Helioscopia... May 19.
amygdaloides April 5, J.C.B. and J.B.K.
Peplus ... ... May 31.
exigua ... ... June 12.
Mercurialis—
perennis ... Feb. 1, W.M.H.M.; Feb. 4, G.W.D.L.
Callitriche—
verna ... ... May 6, W.M.H.M.
Urtica—
urens ... ... all the year (Jan. 21).
dioica ... ... May 6, K.G.; May 26.
Ulmus—
suberosa ... one tree full, Mar. 7, Mar. 24.
montana ... March 3.
Salix—
caprea ... ... March 2, A.E.T.
triandra ... March 22.
viminalis ... March 24.
fragilis ... April 25, C.E.T.
Betula—
glutinosa ... May 6, W.M.H.M.
Quercus—
Robur ... ... May 1, C.E.T.
Corylus—
avellana ... January 20.
Taxus—
baccata ... full, February 4.
Pinus—
sylvestris ... May 6, W.M.H.M.
Larix—
Europæa ... March 26.
Tamus—
communis ... April 30, bud.; fl. June 6.
Orchis—
morio ... ... April 29, C.E.T.
mascula ... coloured bud, Ap. 5, F.E.T.; Ap. 24, C.E.T.
maculata ... May 28, N.M.
latifolia ... by May 30.
pyramidalis... June 12, full, D.E.O.
Gymnadenia—
conopsea ... June 12, D.E.O.; W.G.H.
Habenaria—
chlorantha ... May 28, N.M.
Listera—
ovata ... ... May 23, W.M.H.M.
Neottia—
nidus-avis ... May 31, W.G.H.
Cephalanthera—
grandiflora ... full June 12, T.K.
Iris—
Pseudacorus June 12.
Crocus—
*vernus ... Jan. 14, 27.

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Narcissus—
pseudo-narcissus Mar. 4, G.W.D.L.
Galanthus—
nivalis ... ... Jan. 17, F.E.H.
Jan. 26.
Polygonatum—
multiflorum... May 5.
Ruscus—
aculeatus ... Jan. 14.
Fritillaria—
*Imperialis... Mar. 30.
Scilla—
*sibirica ... Feb. 2.
Allium—
ursinum ... May 1, C.E.T.
Endymion—
nutans... ... Ap. 4, F.E.T.
Juncus—
effusus... ... July 4.
glaucus ... June 12, K.W.
lamprocarpus July 22, P.W.
bufonius ... July 4.
Luzula—
pilosa ... ... Ap.5,J.C.B.&J.B.K.
campestris ... Mar. 26.
Alisma—
plantago ... July 4.
Sagittaria—
sagittifolia ... full July 4.
Sparganium—
ramosum ... June 12, K.W.
simplex ... July 4.
Arum—
maculatum .. bud Ap. 5, Ap. 21,
C.E.T.
Potamogeton—
natans ... ... June 12.
perfoliatus ... by July 4th.
Eleocharis—
palustris ... May 30, (Chilton).
Scirpus—
cæspitosus ... full June 30.
Carex—
divulsa... ... [June6,W.M.H.M.]
glauca ... ... Ap. 25, C.E.T.
sylvatica ... May 11, G.W.D.L.
hirta ... ... May 12.
paludosa ... Ap. 28, C.E.T.
riparia... ... Ap. 5, F.E.T.
ampullacea ... by June 16.
Phalaris—
arundinacea June 12.
Anthoxanthum—
odoratum ... Ap. 30, C.E.T.
Phleum—
pratense ... June 12, W.G.H.
Alopecurus—
pratensis ... Ap. 1.
geniculatus... June 6.
agrestis ... May 9.
Milium—
effusum .. May 5, C.E.T.
Agrostis—
vulgaris ... June 30.
Holcus—
lanatus ... May 26.
Aira—
cæspitosa ... June 12.
Trisetum—
flavescens ... June 12.
Avena—
pratensis ... by May 9
pubescens ... May 9.
Arrhenatherum—
avenaceum ... May 30.
Kœleria—
cristata ... June 6.
Melica—
uniflora ... May 7, G.W.D.L.
Poa—
annua ... ... all the year.
trivialis ... May 26.

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pratensis ... May 5.
Glycoria—
aquatica ... June 12.
plicata... ... June 6.
Briza—
media ... ... May 19.
Cynosurus—
cristatus ... June 6.
Dactylis—
glomerata ... May 9.
Festuca—
ovina ... ... May 9.
rubra ... ... May 12.
gigantea ... June 30.
loliacea ... June 16.
pratensis ... May 30.
arundinacea... June 12.
Brachypodium—
sylvaticum ... June 12.
Bromus—
erectus .. ... Ap. 29, C.E.T.
asper ... ... May 9.
sterilis ... ... May 4.
errafalcus—
commutatus... June 12.
mollis ... ... Ap. 29, C.E.T.
Triticum—
caninum ... June 12.
repens ... ... June 16, (full).
Lolium—
perenne ... May 4.
Equisetum—
arvense ... Ap. 28, C.E.T.
limosum ... May 5.
palustre ... May 16.
Rye ... ... Ap. 28.
Wheat ... ... June 12.
Oats ... ... June 12.
Barley ... ... June 16.

Vib. Laurustinus—in flower Jan. 21, in the town; Feb. 7, in College.

Daphne Laureola—Jan. 21, in College Garden; full at Mildenhall, Jan. 21; not out in the town.

Galanthus nivalis—Jan. 17, near Marl.; heads hanging down at Mildenhall, Jan. 21.

Ruscus aculeatus—only in bud at Mildenhall, Jan. 21.

NEW SPECIES AND LOCALITIES.

Carex ampullacea—Poulton, June 16.

Carex filiformis—Chilton Foliatt, May 29.

Scirpus cæspitosus— „ „

Hydrocotyle vulgaris— „ „

Conium maculatum—Axford

Triticum caninum—Poulton

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DONATIONS TO THE MUSEUM.

The Museum has been considerably enriched by two liberal Donors, both Old Marlburians, and both resident abroad. The first, H. C. Spry, is now in India, and in addition to previous donations of considerable interest, he has sent us a valuable set of Indian Birds, 74 in number, and eggs of 9 species of birds, some of the latter being unfortunately broken in the journey. The second, C. W. Everard, on coming to England from China, on leave, brought with him a very interesting series of Chinese and Indian objects, many of them being in actual use at the time he purchased them, as he very correctly considered that they would be more appreciated than if bought new. These objects, Razors, Spectacles, Shoes, &c., with those sent by Spry from India, have given a greatly increased interest to one part of the Museum, and have justified us in accepting objects which would otherwise have been considered unfit to be retained in a Museum such as ours. A complete list of the objects presented is given below.

SKINS OF INDIAN BIRDS, PRESENTED BY H. C. SPRY, ESQ.

1. Aquila Bifasciata (Gray)—Double-Banded Eagle.
2. Falco Jugger (Gray)—The Jugger Falcon.
3. Lithofalco Chiquera (Daud)—Red-headed Merlin.
4. Macronisus Badius (Gmel)—Shikra.
5. Haliaster Indus (Bodd)—Brahminy Kite.
6. Circus Æruginosus (Linn)—Marsh Harrier
7. Bulaoca Ocellata (Lesson)—Mottled Wood Owl.
8. Ascalapha Coromanda—Dusky-horned Owl.
9. Ketupa Ceylonensis—Brown Fish Owl.
10. Athene Brama (Temm)—Spotted Owlet.
11. Poliomis Teesa—White-eyed Buzzard.
12. Hierococyx Varius—Brain fever Bird.
13. Cocytes Melanoleuces—Rain Cuckoo.
14. Eudynamys Orientalis—Koel.
15. Graculas Macei—Cuckoo Shrike.
16. Lanius Lahtora—Indian grey Shrike.
17. Lanius Erythronotus—Rufous Backed Shrike.

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18. Lanius Cristatus—Brown Shrike.
19. Coracias Indica—Indian Roller.
20. Pastor Roseus—Rose-coloured Starling.
21. Sturnus Pastor Contra—Pied Starling.
22. Acridotheres Ginginianus—Bank Minah.
23. Acridotheres Tristis—Common Minah.
24. Temenuchus Pagedarum—Crested Minah.
25. Lobivanellus Goensis—Red-wattled Lapwing.
26. Hiplopterus Malabaricus—Spur-winged Lapwing.
27. Cursorius Coromandelicus—Courier Plover.
28. Malacocircus Canorus—Seven Sisters.
29. Ceryle Rudis—Pied Kingfisher.
30. Halcyon Fuscus—White-Bellied Kingfisher.
31. Dicrurus Macrocercus—King Crow.
32. Machates Pugnax.
33. Sturnus Aurantia—Large River Tern.
34. Sturnus Juvanica—Black-bellied Tern.
35. Croropus Phœnicopterus—Bengal Green Pigeon.
36. Miniceros Bicornis—Hornbill.
37. Dendrocitta Rufa—Indian Magpie.
38. Turtur Cambiensis—Little Brown Dove.
39. Turtur Suratensis—Spotted Dove.
40. Brachytennus Aurantius—Golden-Backed Woodpecker.
41. Picus Mahratensis—Yellow-fronted Woodpecker.
42. Upupa Nigripennis—Indian Hopoe.
43. Palæornis Alexandri—Alexandrine Paraquet.
44. Pericrocotus Brevirostris—Short-Billed Minavet.
45. Lantholœma Indica.
46. Pyconatus Pugillis—Bulbul.
47. Merops Viridis—Small Bee-eater.
48. Merops Phillipensis—Large Bee-eater.
49. Orialus Kundo—Indian Oriole.
50. Dendrocygna Arcerata—Whistling Teal.
51. Nettapus Coromandelicus—Cotton Teal.
52. Budyses Citriola—Yellow-headed Wagtail.
53. Budyses Flava—Indian Field Wagtail.
54. Motacilla Personata.
55. Hirundo Erythropygia—Red-rumped Swallow.
56. Phylloscopus Viridamus.
57. Reguloides Supuciliosus.
59. Pratincola Caprata—White-winged Robin.

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59. Cercomela Fusca—Brown Rock Chat.
60. Copsychus Saularis—Magpie Robin.
61. Arathnothra Asiatica—Flower-pecker.
62. Estrelda Amandava—Munia Lal Golden Bills.
63. Phynhulanda Grisea.
64. Euspira Luteola—Red-headed Bunting.
65. Prinia Stewarti—Stewart's Wren Warbler.
66. Caprimulgus Asiaticus (Latham)—Common Indian Night Jar.
67. Herodias Garsetta—Smaller Egret.
68. Herodias Alba—The large Egret.
69. Hydrophasianus Chirurgus—Water Pheasant.
70. Common Paddy Bird.
71. Quail.
72. Passer Indicus.
73. Columba Intermedia—Indian Blue Rock.
74. Himantopus Candidus.

LIST OF EGGS.

1. Grus Antigne (Sairus Crane)—1 Egg.
2. Hydrophasianus Chirurgus—3 Eggs.
3. Herod'as Garsetta—4 Eggs.
4. Columba Intermedia—1 Egg.
5. T. Melanocephalus (White Ibis)—1 Egg.
6. Ardea Cinerea (Blue Heron)—1 Egg.
7. Lobivanellus Goensis—1 Egg.
8. Gyps Bengalensis (White-Backed Vulture)—2 Eggs.
9. Milvus Govinda—1 Egg.

CHINESE AND INDIAN OBJECTS, PRESENTED BY C. W. EVERARD, ESQ.

Boy's Caps—Indian, Lucknow.
Metal Tray—Benares.
Gong.
Tartar Tobacco Pipe.
2 Pairs of Ladies' Ear-rings, from Rangoon.
1 Pair ditto from Benares.
Nose Ring.
Armlet.
Necklace.
Pair of Bracelets.
Pair of Sandals.
Pair of Mongolian Bracelets, Cornelian.

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24 Paintings on Talc.
Rice Paper.
2 Silver Ornaments, to hang on an Opium Pipe.
Geomanser's Instrument.
Mandarin's Boots.
3 Bottles of Medicine.
2 Visiting Cards, Pink.
3 Bank Notes.
3 Envelopes.
Specimens of Chinese Note Paper.
Box containing Fan Case, Purse, 2 Betel-Nut-Bags, Tobacco Pouch, Spectacle Case.
Pair of Manchu Lady's Shoes.
Pair of Chinese Shoes, Ningpo.
Pair of Chinese Razors.
Specimen of Bird's Nest for soup.
3 Chinese Lady's Claws.
Ivory Case, containing Chop Sticks, Knife, and Toothpick.
Compass.
Gentleman's Spectacles.
Cane Jacket.
Boy's Cap.
Chinese Lady's Back Hair.
4 Pictures for hanging on the Walls:
3 Pictures for the New Year.
Map of Tea Districts.
Proclamation in connection with the Massacre of the French.
Set of Rubbings from Slate of the first Missionaries from India to China, 17 in number.
Chinese Lock and Key.

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WEIGHTS AND MEASUREMENTS OF THE SCHOOL.

It had often been felt that a more accurate acquaintance with the bodily development of the members of the school, than can be had by mere observation, was desirable for many reasons. Plans were repeatedly laid for weighing and measuring the boys, but nothing resulted until a request was made last December, by Mr. Francis Galton, that the Anthropological Society of London might be furnished with the age, height, and weight of the school. The weighing and measuring began on February 21st, and was continued (on half-holidays, that is, three times a week) until March 11th; 550 boys were weighed and measured; ten were absent, who were weighed in June, with the new boys admitted in May. Mr. Galton required only age, height, and weight, but it was thought well to obtain other physical results while the examination was being held; accordingly, the circumference of the head, the chest, the arm, and the leg, were noted in each individual.

The weighing took place just after dinner, that being the time when the school could be most readily got together for the purpose. The Anthropological Society wished the weight to be taken with the ordinary in-door clothing and shoes; this was to be regretted, as at that season of the year, thick clothes are frequently worn by some boys, and shoes vary much. The weight was taken by one of *Hawksley's* patent Weighing Machines, which for simplicity and accuracy of action cannot be surpassed; after all the weighing was done, it had not varied a fraction of an ounce.

The height was found by means of a simple contrivance, which can be made by any carpenter, an upright plank 11 inches wide, and 6 feet 6 inches

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high, has a collar of iron, fitting not very tightly, to slide up and down, the collar carries a piece of oak seven inches square, which descends upon the head of the person under examination, the height being shown on a scale of feet and inches let into the upright plank.

The head measurement is a line passing above the occipital protuberance, and above the frontal eminences, in a horizontal line.

The chest was measured with the waistcoat on. The arm was held in a loosely flexed state, the muscles being at rest and flaccid, the measurement being made round the thickest part of the biceps muscle.

The leg was measured at the thickest part of the calf, the muscles being at rest.

In addition to detailed weights and measurements, a table showing the average weights and sizes at the different various ages has been added, with a view of showing general results.

It is interesting to note a few of the exceptional weights and measures of some of the boys.

In weight—one boy nearly 17 years weighed only 5 stones 6½ lbs.; while a boy of 14 weighed 10 stones 6½ lbs., both boys being in the same form, another boy only 10 years of age, weighed 5 stones 6½ lbs. Again in the Upper 5th Form, the average weight is 9 stones 12 lbs., there are 5 boys who average only 7 stones 4 lbs. The heaviest weight is 12 stones 5½ lbs., the age of the boy being under 16. There are 20 above 11 stones.

In height—of 4 boys nearly 15 years of age, one is 4 ft. 7 inches, another 4 ft. 6¾ inches, another 4 ft. 5¼ inches and the other 4 ft. 3¼ inches. There are 9 boys of the same age quite a foot taller than these heights; several boys of 11 years are 4 ft. 10 and 4 ft. 11 inches high. The tallest boy is under 16 and 6 ft. 3¾ inches in height.

The heads show very little change in respect of age. The largest head is 24½ inches in circumference, the boy being 17 years of age; another boy's head is 24¼, his age is nearly 18; both boys are high in the school. The small variations in the size of the head is well shown in the table of averages. If younger children were brought into comparison, this would be still more

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apparent. In a boy not quite 8 years old, the head measured 22 inches, a size exceeding that of some of the distinguished members of the 6th Form.

Of the chest—One boy of 12 was only 25½ inches in circumference, while 2 boys of 10 were 28, and another of that age 21½; one boy of 16 was only 27 inches, the largest chest belonging to a boy of that age, and measuring 37½ inches.

The arm—The smallest arms 6½ and 6¾ inches, belong to boys of 14 and 16 respectively; a boy of 10 has an arm 8 inches round. The largest arm was 12 inches in circumference at the age of 19.

The leg—The largest legs were 16¼ and 15¾ inches, belonging to boys of 18 and 16 years, the smallest was 9¾ inches in boys of 11 and 12 years, while 2 boys of 10 had legs 11 inches round, one boy of 15 had a leg 10 inches, another of 16, a leg of 10¾, and a boy of 17 had a leg only equal to his schoolfellow of 10, viz., 11 inches.

The work of weighing and measuring, was carried out with the assistance chiefly of Mr. Rodwell, Mr. Bourne, Mr. Drury, and several other of the masters.

W. FERGUS.

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		Form.	House.	Born.	Height. ft.	in.	Weight. st.	lbs.	Circumference of head. in.	chest. in.	arm. in.	leg. in.	Place of birth.
445	Abud, H. M.	Up. 4 (a)	A. H. B.	June 58	5	5⅛	9	11⅛	22¼	32⅛	10⅝	13⅛	Staffordshire.
173	Acton, E.	Up. 3	H. B.	Jan. 61	5	1⅛	7	3⅛	22	30	7¾	12⅛	Dorsetshire.
228	Adams, J.	Mod. M. (2)	C. W. B.	Oct. 59	5	3⅛	8	2¾	22¼	31¼	8⅛	12¾	London.
405	Agnew, (1) V. J. D.	Low. 5 (1)	J. B. G.	April 58	5	3¾	8	8	21¾	32	8¾	13⅛	Wigtonshire.
568	Agnew, (2) V. J. F.	Mod. U. (1)	J. B. G.	May 58	5	3¼	7	4½	21⅛	29	8⅛	12¾	Madras.
564	Agnew, (3) V. J.	Mid. 4 (b)	J. B. G.	Aug. 59	5	0¾	6	2	21¼	26¼	7	11¼	Wigtonshire.
510	Alexander, R. H.	Mod. M. (1)	W. E. M.	Aug. 58	5	0¾	7	9¾	21⅛	30	8¾	12¾	Boulogne.
483	Alston, G. H.	Low. 5 (1)	A. B.	Feb. 59	5	1¾	7	6	21⅛	28⅛	8⅛	12⅛	Lanarkshire.
293	Andrews, L. W.	Low. 3	H. B.	Sep. 61	4	6	4	13⅛	21	26⅛	7¼	10	Wiltshire.
373	Arkle, (1) A. H.	Mod. U. (2)	C. W. B.	Aug. 58	5	5¼	8	8¼	21⅛	30¾	9¼	12⅛	Cheshire.
374	Arkle, (2) A. W.	Up. Sh.	C. W. B.	Dec. 60	5	1¼	7	3¼	21⅛	28⅛	8¾	11¾	Cheshire.
141	Armitage, R.	6th F.	H. A. J.	Mar. 57	5	0⅜	6	10¾	21¾	28¾	8⅛	11⅛	Herefordshire.
370	Armstrong, (1) H R.	Mod. U. (1)	A. H. B.	Aug. 55	5	6⅛	11	4	23¾	35⅛	11⅛	16¼	Dublin.
308	Armstrong, (2) O. R.	Mid. 4 (b)	A. H. B.	Sep. 60	4	10¾	6	12	22	27¾	8¾	12	Dublin.
217	Arnold, J. T. B.	Low. 3	H. B.	July 60	4	7	5	11¼	21⅛	27⅛	7⅛	11⅛	Sussex.
25	*Arrowsmith, P. R.	Up. 2	H. B.	Sep. 61	4	9⅛	6	4	21¾	27¾	7¼	11¾	Inverness.
105	Arthur, W. W.	Up. Sh.	A. B.	June 57	5	6¼	9	5¼	22¼	30⅛	9¼	13¾	Devon.
393	Askwith, (1) W. B.	Mod. Up. (2)	F. E. T.	Dec. 58	4	10⅛	7	1	22¼	31	8¼	12	Essex.
580	Askwith, (2) G. R.	Mid. 4 (a)	F. E. T.	Feb. 61	4	11⅛	6	6¼	22	29⅛	7¾	11⅛	Essex.
215	Atkinson, J. N.	6th F.	A. H. B.	May 57	5	10¼	10	13¾	22	35	10⅛	14⅛	Westmoreland.
85	Austen, A. R.	Low. 4	H. R	June 60	4	8¼	5	9¾	20¼	27¼	7¼	11	Hants.
143	Baily, C. S.	Low. 4	C. S.	May 58	5	4	8	5¾	21¾	31⅛	9	13⅛	Wilts.
181	Baggallay, R.	Mod. Low.	E. W. M. L.	Nov. 59	5	5¼	8	10¼	21¾	32	9	12	Surrey.
474	Balfour, T. G.	Mid. 5	F. E. T.	Dec. 58	5	3⅛	7	13	22⅛	30¼	8¾	12	London.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
531	Barnet, G.	Mod. U. (1)	W. E. M.	July 58	5	4½	9	2½	22½	31½	10	13	London.
482	Barnwell, H. L.	Mod. M. (2)	C. W. T.	Nov. 58	5	6½	9	9½	22	32½	9½	13½	Dublin.
98	*Barrett, D. L.	Mod. U. (2)	E. W. M. L.	Sep. 58	5	7	9	11½	20	33½	11	14	Norwich.
271	Barry, C. E.	Low. 4	C. W. B.	Feb. 59	5	6	8	8½	22½	31½	8½	12½	Dublin.
573	Bascom, C. D.	Mod. M. (2)	W. E. M.	June 58	5	6½	8	11½	22½	34	9	13	Barbadoes.
43	Baskerville, C. H. L.	Mid. 4 (b)	H. R.	Oct. 60	5	0	6	13½	21½	28½	8	12	Somersetshire.
281	Bassett, G. F.	Up. 4 (a)	C. W. B.	Dec. 58	5	4½	8	2	22½	30	8½	13	Hants.
485	Beazley, E. A.	Low. 5 (2)	W. E. M.	Aug. 57	5	6½	9	13½	22½	33	9½	13	Cheshire.
549	Bell, F. C.	Low. 4	W. E. M.	Feb. 60	4	9½	6	9½	20½	28½	7½	11½	London.
415	Bellhouse, K. C.	Low. Sh.	W. E. M.	Jan. 61	4	7½	5	10	21½	27½	8	11½	Manchester.
542	Bengough, C. S.	Low. 3	W. E. M.	Jan. 61	5	1½	6	12½	21½	28½	8	11½	Somersetshire.
22	Bernays, A. V.	Low. 5 (1)	E. W. M. L.	Dec. 57	5	5½	9	6	21½	32½	10	13	Middlesex.
431	Bickford-Smith, R.A.H	Up. Sh.	J. B. G.	May 59	5	4½	8	0½	21½	30	8½	12½	Cornwall.
517	Bicknell, G. E.	Mod. Low.	W. E. M.	July 59	5	1½	7	5½	21½	29	9	12½	Surrey.
190	Bird, A. W.	Up. 4 (b)	E. W. M. L.	Mar. 61	4	6½	5	6½	20½	28	7½	10½	Yorkshire.
296	Birdwood, F. W. L.	Mid. 4 (b)	H. A. J.	Aug. 61	4	7½	5	6½	20½	25½	7½	10½	Madras.
399	Blackett, H. W.	Mod. U. (2)	J. B. G.	Nov. 57	6	0	11	9½	23½	36½	10½	14½	Middlesex.
41	Blackett-Ord, C. E.	6th F.	A. H. B.	Oct. 58	5	4½	7	6½	23	30½	8½	11½	London.
135	Blake, R. D. M.	Mod. M. (2)	A. B.	July 59	5	5	9	7½	22½	32½	9½	13½	Glo'stershire.
234	Blandy, W. C.	Mid. 4 (a)	E. W. M. L.	May 60	4	11½	6	9½	21	30	7½	11½	Berkshire.
418	Bond, H. C.	Low. 5 (1)	Home-B.	June 58	5	3½	8	3½	21	30½	8½	13½	Wiltshire.
295	Bontein, J. S.	Mod. U. (2)	F. E. T.	Nov. 59	4	9½	6	3½	21½	28	8	11½	London.
202	Borlase, A. C.	Low 5 (1)	H. A. J.	Sept. 58	5	4½	8	7½	22	33½	10	13½	Cornwall.
138	Bowden-Smith, A.	Up. 4 (b)	E. W. M. L.	Mar. 60	4	10½	6	5½	21½	27½	7½	11½	Warwickshire.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
117	Bowers, R. F.	Up. 2	H. R.	Nov. 60	4	6½	5	9	21	29½	7½	11	India.
541	Brancker, C. H.	Mod. M. (1)	W. E. M.	April 58	5	4½	8	12½	21½	33½	9	13½	Liverpool.
535	Bridson, J. R.	Low. Sh.	W. E. M.	Aug. 61	4	8	5	7	21	27½	7½	11	Lancashire.
543	Bright, A. S.	Mod. U. (1)	J. B. G.	Aug. 57	5	4½	9	2½	22	33½	9½	12½	Brighton.
47	Brodhust, E. H. H.	Low. Sh.	H. R.	Aug. 62	4	4½	5	1½	20½	26½	7½	11	Yorkshire.
68	Brown, (1) J. C.	6th F.	H. A. J.	Oct. 55	5	11½	10	1½	23½	32½	9½	12½	Glo'stershire.
77	Brown, (2) E. W.	Low. 5 (1)	C. S.	Sept. 56	5	9½	11	3½	22½	33	10½	14½	Radnorshire.
145	Brown, (3) W. R.	Up. 5	A. B.	Jan. 57	5	9½	11	0½	22½	34½	10½	15	Glasgow.
146	Brown, (4) A. J.	Up. Sh.	A. B.	May 58	5	4½	7	11½	21½	30½	8½	12½	Glasgow.
469	Brown, (5) T. G.	Low. 2	T. A. P.	Jan. 62	4	4½	4	11½	21½	27	7	11	Glasgow.
470	Brown, (6) E. L.	Low. 2	T. A. P.	Oct. 63	4	5½	4	13	21	28½	7	11	Glasgow.
74	Browning, (1) J. H.	Mod. M. (2)	C. W. B.	Sept. 57	5	7	10	10	22½	33½	10	14½	London.
195	Browning, (2) A. R.	Mid. 4 (b)	H. R.	Feb. 60	5	0½	7	0	21	29½	8½	12	Bengal.
196	Browning, (3) H. A.	Low. 4	H. R.	Feb. 61	4	11	6	3½	20½	27	7½	11	Bengal.
454	Bryans, E.	Up. 5	A. H. B.	Dec. 57	5	6½	8	7½	22	29½	9½	12½	Tours.
72	Bryant, S. W.	Up. 4 (b)	E. W. M. L.	July 59	4	9½	5	10½	20½	29½	7½	11	Devon.
203	Buckle, E. W.	6th F.	A. H. B.	Dec. 56	5	1½	7	0½	21	28½	8½	11½	Somersetshire.
36	Buckley, G. J. B.	6th F.	A. H. B.	Dec. 57	5	4½	9	6	22½	32½	9½	13½	Wiltshire.
125	Buller, (1) F. G.	6th F.	E. W. M. L.	May 55	5	6½	11	3½	22½	35½	11½	15	Dorsetshire.
246	Buller, (2) W. A.	Low. 5 (2)	E. W. M. L.	Oct. 57	5	2½	8	3	21½	31½	8½	13	Somersetshire.
193	Bulley, A. K.	Mid. 4 (a)	H. R.	Jan. 61	5	0	6	4½	21½	27½	8	11½	Lancashire.
507	Bulteel, (1) H.	Mod. Low.	W. E. M.	Aug. 57	5	9	10	9	22½	34½	9½	13½	Devon.
518	*Bulteel, (2) L.	Up. 4 (a)	W. E. M.	Aug. 60	4	10	5	11	21½	26	7	11	Devon.
304	Burge, G. R.	Up. 5	A. H. B.	Aug. 57	5	7½	9	7½	21½	33½	9½	13½	India.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth
557	Burness, A. J.	Up. 4 (a)	F. E. T.	July 58	5	2¾	8	1	21⅛	30¾	8¼	12¾	Essex.
449	Burnett, A. D.	Up. Sh.	A. H. B.	Dec. 58	5	5½	8	5½	22	29½	8¼	12¾	Sussex.
511	Burton, A. O.	Up. 4 (a)	W. E. M.	Nov. 57	5	9½	11	0½	22¼	34	10⅛	14¼	Surrey.
188	Bushby, (1) G.	Mod. M. (2)	C. W. B.	Sept. 57	5	2½	7	7	21	30½	8¼	12¼	Sussex.
506	Bushby, (2) T.	Mod. M. (1)	W. E. M.	Mar. 58	5	7	10	2¼	21⅛	33½	10⅛	14	Liverpool.
137	Busk, W. G.	Up. 4 (a)	C. S.	Mar. 60	5	0⅞	6	10½	20½	30½	8	11¼	Middlesex.
416	Butcher, L. H.	Mod. U. (2)	T.A.P.	Nov. 59	5	4¾	8	7¾	22	33	8½	12¼	Middlesex.
214	Butterworth,(1) A.K.	6th F.	E. W. M. L.	Dec. 54	5	5½	10	4½	22	33½	11⅛	14	Somersetshire.
8	Butterworth,(2) G.M.	Mid. 5	E. W. M. L.	May 58	5	1½	7	8½	21½	30	8¼	12	Glo'stershire.
524	Cairnes, W. A.	Mod. U. (1)	W. E. M.	Dec. 58	5	4	7	2½	21⅜	30	8	11½	Dublin.
204	Cambridge, G. T. P.	Up. 5	C. W. B.	Jan. 57	5	9½	9	12	21⅞	33	8¼	13¼	Dorset.
521	Campbell, R.	Up. 4 (a)	W. E. M.	Sept. 58	5	9½	9	12½	21½	31	8¼	13¼	Surrey.
501	Carnegy, A. G. C.	Mod. Up. (2)	W. E. M.	Sept. 57	5	8	10	9½	22¼	33½	10	14	Benares.
447	*Carr, O. C.	Low. 5 (2)	A. H. B.	Feb. 58	6	0	10	6½	22¼	32½	10¼	13¼	Durham.
284	*Carter, (1) E. A. F.	Mod. Mid. (2)	C. S.	July 58	5	10	10	6¼	21¾	36	10¼	13	Essex.
285	Carter, (2) H. R. O.	Up. (2)	H. R.	Oct. 61	5	2	7	11	20½	29¼	9½	12	London.
555	Cathcart, W. T.	Mod. Up. (2)	F. E. T.	May 59	5	6	8	7	21½	30½	8¼	13	Fifeshire.
512	Chamberlain,(1) A.A.	Mod. U. (2)	W. E. M.	May 58	5	3¾	8	1¼	20½	30½	8¼	13	Lancashire.
513	Chamberlain,(2) T.F.	Mod. M. (1)	W. E. M.	April 60	4	8	5	8½	20¾	26¾	7½	11	Lancashire.
277	Champion, H. H.	Low. 5 (2)	A. H. B.	Jan. 59	5	1½	7	8½	21½	28½	8½	12	Bombay.
60	Chandler, A.	Low. 5 (1)	A. B.	Mar. 58	5	3½	7	8½	21¾	28½	8¼	12	Surrey.
360	Chapman, H. A.	Mod. U. (1)	J. B. G.	Nov. 58	5	2½	7	5¼	21½	31¼	8¼	11¾	Surrey.
140	Chappel, W. H.	Up. 4 (b)	A. H. B.	May 60	5	2½	6	12½	21¼	28½	7½	12	Cornwall.
251	Charlewood, H. C.	Up. Sh.	E. W. M. L.	Mar. 57	5	8¼	9	0½	22¼	30½	9¼	13½	Notts.

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		Form.	House.	Born.	Height. ft. in.	Weight. st. lbs.	Circumference of head. in.	chest. in.	arm. in.	leg. in.	Place of birth.
559	Charley, E.	Mid. 4 (b)	F.E.T.	Mar. 60	5 2½	7 11	22½	29½	8½	12½	Antrim.
29	Cholmeley, R. F.	Up. 4 (b)	H. R.	Feb. 62	4 4½	4 9½	20	26½	6½	10	Norfolk.
20	Cholmondeley, E.C.	Up. Sh.	A. H. B.	Mar. 60	4 7½	6 1½	21½	27½	7½	11½	Glo'stershire.
119	Clark, T. H.	Up. Sh.	E. W. M. L.	Nov. 57	5 5½	9 0½	22	30½	9½	12½	Wiltshire.
151	Clarke, C. S.	Low. Sh.	H. R.	July 61	4 9	6 0	20	29	8	12½	Brighton.
516	Clay, J.	Low. 5 (1)	W. E. M.	Jan. 58	5 4½	8 4½	21½	28½	8½	12½	Cambrig'shire.
7	Close, E. P.	Low. 3	H. R.	Sept. 60	4 10½	6 6½	21½	29½	8½	11½	Punjaub.
487	Codd, A. P.	Mid. 5	C. W. B.	Nov. 57	5 7½	8 13½	23	31½	9	13	Dorsetshire.
129	Coetlogon, (1) de, C.E.C.	Low. Sh.	H. R.	Jan. 62	4 11½	5 13½	21	27	7½	11½	Warwickshire.
309	Coetlegon, (2) de, R.J.	Low. 2	H. R.	Dec. 62	4 9	5 4½	21	29	7	10½	Warwickshire.
334	Colville, (1) A. E. W.	Mod. U. (1)	W. E. M.	Nov. 57	5 7½	9 7	22½	32½	9½	13½	London.
500	Colville, (2) S. C. J.	Mod. Low.	J. B. G.	Feb. 61	4 11½	6 5½	21½	27½	8	11½	London.
461	Colvin, (1) C. H.	Mid. 4 (b)	J. B. G.	April 58	5 6	9 0½	22	30½	9½	13½	Herts.
460	Colvin, (2) F. F.	Mid. 4 (b)	J. B. G.	Jan. 60	4 11	6 2½	20½	29	7½	11½	Essex.
495	Commins, J. A.	Mod. Low.	Home-B.	Sept. 58	5 3	8 11½	21	31½	9½	13½	Melbourne.
18	Coney, E. G.	Up. 4 (b)	H. A. J.	April 59	5 3½	8 1½	22½	30½	9	12½	Somersetshire.
54	Connor, (1) G. H. A.	Mod. Low.	H. R.	Oct. 59	4 8	6 2½	21½	28½	8	11½	Isle of Wight.
53	Connor, (2) H. G. A.	Low. Sh.	H. R.	Oct. 59	4 10½	7 0	20½	29½	8½	11½	Isle of Wight.
341	Cooper, (1) E. J.	Mod. M. (1)	A. B.	April 58	5 4	7 8½	21½	30	8½	12½	Durham.
523	Cooper, (2) W. G. O.	Mid. 4 (b)	W. E. M.	Jan. 59	5 4½	7 11½	21½	30½	8	11½	London.
395	Cooper, (3) R. W.	Up. 2	H. R.	Nov. 60	4 9	6 0½	21½	26	8½	11½	Kent.
520	Corbett, H. E.	Mid. 4 (a)	W. E. M.	Jan. 58	5 8½	10 3½	23½	31	9½	13½	Surrey.
540	Cother, P. L.	Mid. 4 (b)	W. E. M.	Aug. 58	5 2½	7 13½	21½	29½	8½	13	Wiltshire.
110	Cox, E. C.	Up. 5	E. W. M. L.	Feb. 56	5 10½	11 0½	22½	33½	10½	14½	Devon.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
239	Crawley, H. H.	Mod. M. (1)	E. W. M. L.	Dec. 56	5	2½	7	11½	21	31½	8½	12	Hants.
368	Crowe, W. F.	Low. 2	C. W. T.	Feb. 62	4	10	6	1½	21½	29	8	11	Clare.
409	Cumberbatch, E. C.	6th F.	W. E. M.	Mar. 56	5	3½	8	9	21½	31½	9	12½	London.
318	Curtler, (1) L. M.	Up. 4 (a)	J. B. G.	Dec. 57	5	7½	9	6	21½	31½	9½	12½	Worcestershire
319	Curtler, (2) W. T.	Up. 4 (a)	J. B. G.	Dec. 57	5	6½	9	4½	22½	31	9	12½	Worcestershire
569	Curtler, (3) R. D.	Low. 5 (1)	F. E. T.	Jan. 59	5	4½	7	7½	21½	28	7½	12½	Devon.
226	Dalton, J. H. C.	Low. 4	C. S.	April 61	4	10½	6	5½	22½	27½	7½	11½	Manchester.
76	Daltry, S. J.	Up. 5	E. W. M. L.	Feb. 58	5	1½	7	10½	22½	29½	9	13	London.
90	Daubeny, A. G.	Up. 3	H. R.	Sept. 61	4	7½	5	4½	20½	27	7½	11½	Glo'stershire.
40	Davidson, A. F.	Up. 4 (a)	E. W. M. L.	June 60	4	11½	6	10½	21	28½	8	11½	Dorset.
402	Davies, (1) D. H.	Mid. 4 (b)	C. W. B.	Jan. 59	5	5	7	11½	20½	31½	8½	11½	Surrey.
13	Davies, (2) C. Ll.	Up. 5	A. H. B.	June 60	4	9½	6	0½	22	26½	7½	10½	London.
30	Davies, (3) A. Ll.	Mid. 4 (a)	H. R.	Feb. 63	4	6½	5	5	21½	27½	7	9½	London.
438	Davis, H. M.	Mid. 4 (b)	A. B.	Oct. 58	5	4½	8	11½	22½	31½	9	13½	Worcestershire
397	Dawson, W.	Up. 5	F. E. T.	Mar. 58	5	6½	8	12½	21½	30	9	12½	Surrey.
171	Denman, (1) J.	Mid. 5	E. W. M. L.	Aug. 57	5	7½	9	1½	22½	30½	9	13	Bengal.
139	Denman, (2) R.	Up. 3	H. R.	Mar. 60	5	0½	6	8½	21½	29	7½	10½	Bengal.
463	Dennett, R. E.	Mid. 4 (a)	A. H. B.	Nov. 57	5	8½	9	1	21½	32½	9	13	Valparaiso.
291	Dennis, A. H.	Up. 5	C. S.	July 58	5	7½	8	4½	21½	28½	8½	12½	Hants.
244	DesGraz, C. L. M.	Up. 5	C. W. B.	July 56	5	10½	10	8	22	33½	10	12½	Toulon.
434	Dew, E. N.	Mid. 4 (b)	Home-B.	Mar. 59	5	1	7	6	21	29	8½	12½	Hereford.
170	Dickinson, (1) A. W. H.	Low. 4	C. W. B.	April 59	5	5½	8	7	22	31½	8½	12	Madras.
331	Dickinson, (2) J. T.	Low. 3	Dr. F.	Mar. 61	4	8½	5	9½	21½	27	8	11	Shropshire.
545	Dimsdale, E. T. J.	Up. 4 (a)	F. E. T.	Mar. 59	4	10½	6	12	21½	28	8½	12	London.

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		Form.	House.	Born.	Height. ft. in.	Weight. st. lbs.	Circumference of head. in.	chest. in.	arm. in.	leg. in.	Place of birth.
539	Dixon, (1) C. F.	Low. 4	W. E. M.	Jan. 59	5 7½	8 2	21½	31	8	12½	Yorkshire.
471	Dixon, (2) R. F.	Low. 2	C. W. T.	Jan. 61	5 1	6 13½	21½	29½	8½	12	Yorkshire.
275	Dobie, W. H.	Up. 5	E. W. M. L.	May 56	5 3½	7 9½	22½	30	8½	12	Cheshire.
209	Dods, (1) J. B.	Mid. 4 (a)	E. W. M. L.	Feb. 60	5 1½	7 8	21½	30½	8	11½	Lincolnshire.
187	Dods, (2) R. B.	Up. 3	H. R.	Oct. 61	4 8½	5 13½	21½	29	7½	11½	Lincolnshire.
108	*D'Olier, E.	Mod. U. (1)	A. H. B.	Aug. 57	5 8	8 13	22½	31	8½	12½	Dublin.
276	Douglas, R. G.	Up. 3	H. R.	Mar. 62	4 11½	6 8	21½	29½	8½	12	Worcestershire
496	Dove, J. Ll.	Mid. 5	A. B.	Oct. 56	5 6½	10 4½	22½	33½	10½	14	London.
380	Dowling, C. E.	Mod. U. (2)	H. A. J.	Feb. 59	5 7½	8 11½	21½	32	9	12½	London.
282	Doyne, R. W.	Low. 5 (2)	C. W. B.	May 57	5 5½	9 0½	21½	30½	9	13	Wexford.
441	Draper, C. R.	6th F.	C. S.	April 56	5 7½	11 0½	22½	35½	11½	14	Northants.
241	Drury, A.	Up. 3	H. R.	July 60	4 7	5 3½	21½	27	7½	11	Dublin.
390	Drysdale, (1) A. P.	Mod. U. (1)	F. E. T.	Aug. 56	5 5½	9 0	21½	33	9½	13½	London.
459	Drysdale, (2) F. M.	Up. 3	Home-B.	Mar. 60	4 8½	5 9½	20	26½	7½	12	Demerara.
45	Du Boulay, F. A. H.	Low. 5 (2)	A. B.	June 59	4 10½	6 5½	20½	29½	8½	12	Wilts.
270	Du Buisson, (1) W. H.	Low. 5 (1)	H. A. J.	June 56	5 4½	8 1½	21	29	9	13	Surrey.
303	Du Buisson, (2) H.	Up. Sh.	H. A. J.	Nov. 57	5 8½	10 0	21½	32½	9½	13½	Surrey.
224	Dudgeon, W. J.	Mid. 4 (a)	C. S.	May 59	4 6½	5 5½	21½	27½	7½	11	Dublin.
297	Dyball, R. H.	Up. Sh.	A. B.	Sept. 58	5 2½	7 9½	22½	28½	8	12½	Kent.
337	Edwards, (1) J. C.	Up. 4 (a)	C. S.	Aug. 57	5 7½	10 3	22	32½	9½	14	Hants.
391	Edwards, (2) C. M.	Up. 4 (b)	F. E. T.	Oct. 58	4 11½	6 8½	21½	27½	8	11½	India.
59	Ellis, F. J.	Mid. 5	H. A. J.	Jan. 59	5 4½	8 8½	22	30½	8½	13½	Wiltshire.
79	Elton, O.	Up. Sh.	H. A. J.	June 61	5 0½	6 4½	21½	28	7½	11	Norfolk.
427	Elworthy, W.	Up. 4 (a)	C. S.	May 58	5 0½	7 10	20½	31½	9	12½	Somersetshire.

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		Form.	House.	Born.	Height. ft. in.	Weight. st. lbs.	Circumference of head. in.	chest. in.	arm. in.	leg. in.	Place of birth.
401	Evans, F. H.	Low. 3	C. W. T.	May 60	4 9	6 13½	21½	29	8½	12	Malta.
492	Everingham, H. W.	Low. 3	Home-B.	Sept. 59	5 3½	7 12	21½	31	8½	13½	London.
302	Ewer, A. H. P.	6th F.	A. H. B.	April 57	5 9½	11 0½	22½	34½	10½	14½	Liverpool.
422	Eyres, (1) H. C. A.	6th F.	A. H. B.	July 56	5 6½	9 3½	22	33½	9½	13	Norfolk.
17	Eyres. (2) F. G.	Up. Sh.	A. H. B.	July 60	4 11½	6 4	21½	28½	7½	11½	Norfolk.
103	Fagan, H. R. St. L.	Mod. Mid. (2)	C. W. B.	Aug. 57	5 5½	9 7	21½	33½	9½	13½	Bengal.
12	Falkner, J. M.	Up. 5	E. W. M. L.	May 58	6 3½	11 2½	22½	32	9½	13½	Wiltshire.
478	Fanshawe, H. L.	Low. 5 (1)	C. W. B.	Nov. 57	5 9½	10 6	21½	30½	9½	14	Oxfordshire.
263	Farquharson, A. W.	Mid. 4 (a)	T. A. P.	Feb. 60	5 2	7 1	21	28½	8	11½	Jamaica.
273	Farrar, R. A.	Up. 4 (b)	H. A. J.	May 61	4 8½	5 7½	20	26½	6½	10½	Middlesex.
46	Fellowes, (1) F. W.	Mod. M. (2)	C. S.	Feb. 58	5 3½	7 13	21½	30½	9	12½	Norfolk.
70	Fellowes, (2) J. A. L.	Up. 3	H. R.	April 59	5 4	7 9	21½	30½	8½	12½	Norfolk.
499	Few, F. W.	Mid. 4 (a)	J. B. G.	Nov. 58	4 10½	6 7	22	27	8½	12	Surrey.
169	Finch, A. E.	Up. 5	A. B.	Dec. 56	5 5½	10 0½	22½	34	10½	13	Surrey.
39	Firminger, T. D. C.	Mid. 4 (a)	C. S.	Sept. 60	5 0½	6 10½	22½	29	8	12½	Bengal.
358	Fiske, R. E.	Up. Sh.	C. S.	Dec. 58	5 1½	7 10½	22½	30½	8½	12½	Kent.
62	Flude, J. R.	Low. Sh.	H. R.	Sept. 60	4 10	5 11½	21½	26½	8	11½	Surrey.
385	Flux, A. W.	Mid. 4 (b)	F. E. T.	Oct. 60	5 0	6 2½	21½	26½	7½	10½	London.
174	Foord, T.	Up. 4 (b)	E. W. M. L.	Aug. 59	5 2½	9 4	22½	34½	10	13½	Yorkshire.
311	Forrester, F. W.	Low. Sh.	J. B. G.	July 60	4 11½	6 5½	20½	28½	8½	12	Wiltshire.
536	Forster, R. N.	Up. 4 (b)	C. S.	Oct. 58	4 9½	6 10½	21	29	8½	11½	India.
283	Foss, (1) C. J.	Mod. U. (1)	C. W. T.	July 57	5 8½	10 7	23½	34	9½	13½	Kent.
300	Foss, (2) G. R.	Mod. Low.	C. W. T.	Nov. 59	4 10½	6 11½	21½	29	7½	12½	Kent.
403	Fountain, (1) E. O.	Low. 5 (1)	J. B. G.	Nov. 57	5 0½	6 13½	21	28½	7½	12½	Middlesex.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	leg. in.	Place of birth.
464	Fountain, (2) J. M.	Mid. 4 (a)	J. B. G.	Sept. 59	5	3½	7	1½	22½	29	7½	12	Middlesex.
452	Fountain, (3) A.	Low. 4	Dr. F.	Feb. 62	4	8½	5	9½	21¾	27	7	11¼	Middlesex.
191	Fowler, C. R.	Up. Sh.	H. A. J.	Oct. 59	5	4½	9	1½	21¾	30	9½	13½	Kent.
55	Fox, (1) H. E. E.	Up. Sh.	C. S.	Jan. 58	4	11½	6	12½	21¼	28¾	8	12½	London.
307	Fox, (2) C. E.	Up. 4 (b)	C. S.	Oct. 59	4	8¾	5	10½	22	28	7	10¾	London.
136	Francis, H.	Low. 4	H. R.	Oct. 59	5	0½	6	13¾	22½	28½	8	12	Worcestershire.
550	Froom, C. F. P.	Low. Sh.	Home-B.	Aug. 61	4	10	6	12	21¾	28½	8¾	13	London.
176	Frost, R. P. B.	Low. 5 (1)	A. H. B.	Dec. 58	5	2½	8	0½	21¾	30½	8½	12¼	Middlesex.
6	Furneaux, L. R.	Mid. 5	H. A. J.	Nov. 59	4	6½	5	12	21½	26¾	7½	12	Warwickshire.
458	Furnival, F. H.	Mid. 4 (b)	Home-B.	May 60	5	0¾	7	3½	22	27¾	8¼	12¼	Germany.
130	Gardiner, (1) E. R.	Low. 4	A. H. B.	Oct. 60	5	0¾	7	2	21½	29¼	8¼	12	London.
180	Gardiner, (2) M. B.	Up. 3	H. R.	Jan. 61	4	8¾	5	11½	21¼	28½	7½	11½	London.
227	Garrard, G. E.	Low. Sh.	H. R.	April 60	4	6¼	5	7½	21	27½	7¾	11¼	Worcestershire.
556	Garrod, A. E.	Up. 4 (a)	J. B. G.	Nov. 57	5	6¼	9	5¾	22½	31½	9½	13	London.
104	Gayer, A. C. S.	6th F.	H. A. J.	Aug. 56	5	6¼	9	2¼	22¾	32¼	10	13½	Dublin.
345	Gilbey, A.	Low 3	J. B. G.	Jan. 59	5	2¼	7	7½	22½	30¾	8¾	12¾	London.
199	Giles, W.	Mod. M. (2)	A. H. B.	April 59	4	11¾	7	5¼	21	31	8½	13	Lincolnshire.
435	Gill, A. A.	Mod. M. (1)	F. E. T.	June 58	5	6½	9	9¼	22	34	9	14	London.
100	Glennie, H. J.	Mid. 4 (a)	C. W. B.	Jan. 60	4	11½	8	0½	22¼	27½	7¼	10½	Suffolk.
439	Glyn, (1) F. W.	Low. 5 (2)	A. H. B.	April 57	5	8½	9	4¾	21¼	31½	9	12¼	London.
411	Glyn, (2) H. C.	Mod. Up. (2)	C. W. B.	Feb. 58	5	7¼	9	6¾	22½	32	9¼	13¼	Yorkshire.
184	Glyn, (3) W. E.	Mid. 4 (a)	C. W. B.	Aug. 59	5	0½	7	1¾	22	29¾	9	12¾	Yorkshire.
317	Goad, H.	Mod. U. (1)	J. B. G.	Sep. 57	5	10½	11	0¼	21¾	36	11	13	Yorkshire.
233	Goddard, W. S.	Low. 5 (2)	C. S.	Mar. 59	5	0½	7	3¼	22¼	29½	8½	12	Staffordshire.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
57	Godden, W.	Up. 3	Dr. F.	Oct. 60	5	2	6	7½	21¼	28	7½	11½	Surrey.
340	Godley, F. C.	Mod. M. (1)	C. S.	Mar. 58	5	4½	7	12½	21½	31¼	8¼	12¼	Cavan.
147	Going, (1) W. H.	Mod. Low.	H. R.	Sep. 59	5	0	6	5½	20½	29	7½	11½	Tipperary.
148	Going, (2) G. N.	Up. 2.	H. R.	June 61	4	9½	5	12½	20½	28	7½	11	Tipperary.
387	Gordon, (1) H.	Mod. U. (2)	A. H. B.	Oct. 56	4	9½	6	6½	21½	31	7½	11½	Dorsetshire.
101	Gordon, (2) E. C.	Mod. M. (2)	C. W. B.	Oct. 58	5	0½	6	12½	21	29½	8½	12½	Oxfordshire.
205	Gordon, (3) F.	Mod. Low.	H. R.	July 59	4	8½	4	8	21	26½	6½	10	Dorsetshire.
189	Gordon, (4) C. G.	Up. 3	H. R.	Mar. 60	4	10	6	8½	21	30½	8½	11½	Yorkshire.
206	Gordon, (5) A. W.	Low. 3	H. R.	Sept. 60	4	7	5	3½	21	27	7½	11	Dorsetshire.
417	Gore, F. St. J.	Low. 5 (2)	E. W. M. L.	April 57	5	7½	9	3½	21½	33	8½	12½	New S. Wales.
503	Gostenhofer, C.	Mod. U. (1)	W. E. M.	Dec. 55	5	7	8	12½	21½	34	9	12½	Louisiana.
363	Grainger, C. E.	Mod. U. (1)	F. E. T.	Nov. 58	5	5½	9	9	21½	33½	9½	13	London.
480	Grant, J. P.	Up. Sh.	J. B. G.	Feb. 60	5	1½	6	13½	21½	28½	8½	12½	Bengal.
247	Grant-Dalton, C.	Low. 5 (2)	E. W. M. L.	Mar. 58	5	5½	9	1½	22½	32½	9½	12½	Dorset.
38	Graves, (1) C. L.	6th F.	F. E. T.	Dec. 56	5	6½	8	7	22½	32½	8½	13	Dublin.
476	Graves, (2) R. W.	Up. 5	F. E. T.	July 58	5	4½	8	8	21½	31½	10	13	Kerry.
339	Greswell, W.	Mid. 4 (a)	C. S.	April 59	5	1	7	5½	22	29	8½	12½	Glo'stershire.
99	Griffith, (1) T. Ll. G.	Low. 5 (2)	A. B.	Oct. 57	5	9½	9	7½	21½	31½	9½	13	Oxfordshire.
102*	Griffith, (2) M. C. Ll.	Up. Sh.	A. B.	Oct. 59	4	11½	6	8½	20½	28	8	12	Oxfordshire.
44	Grogan, G. E.	Up. 5	H. A. J.	July 57	5	7½	10	2½	22	31½	10	13½	Norfolk.
366	Grosvenor, S. F.	Mod. M. (1)	F. E. T.	Dec. 57	5	4½	8	11½	22	33	9½	13	Somersetshire.
551	Grove, W. M.	Mid. 5	F. E. T.	Jan. 57	5	7½	8	13½	22½	31½	8½	13½	Kent.
546	Guise, H.	Mod. U. (1)	W. E. M.	Sept. 58	5	0	6	5½	21	28	7½	11½	Glo'stershire.
16	Halcomb, C. H.	Mod. M. (1)	T. A. P.	May 59	5	2	6	11½	21½	28	8½	11½	Staffordshire.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
451	Hall, (1) H. O.	Mid. 4 (a)	H. A. J.	June 58	5	2	6	11½	21½	30	7½	11½	Bucks.
301	Hall, (2) T. A.	Up. 3	H. R.	Aug. 59	5	1	6	11½	21½	29½	7½	12	Bucks.
324	Hamilton, (1) G. I.	Mod. U. (1)	A. B.	July 56	5	7	9	1½	21½	32	9½	13	New S. Wales.
361	Hamilton, (2) J. D.	Mid. 4 (a)	A. B.	May 60	5	7½	5	11	20½	28	7½	11½	At Sea; lat. 49°30 N., lon. 11° W.
329	Harding, J. R.	Mod. M. (2)	A. H. B.	May 58	5	3½	9	8½	22½	33	10	13½	Monmouth.
201	Hardy, (1) W. E.	Mod. U. (1)	A. H. B.	Jan. 57	5	5	9	7½	22	32½	9½	13½	Middlesex.
314	Hardy, (2) H.	Mod. M. (1)	A. H. B.	July 58	5	2½	8	3½	20½	31	8½	13	Middlesex.
112	Hardy, (3) P.	Up. 4 (a)	A. H. B.	Sept. 60	5	0	7	4½	22½	29	7½	12½	Middlesex.
322	Harke, W. F. V.	Low. 3	H. R.	Jan. 61	4	11½	7	1	22	30½	8½	11½	Derbyshire.
336	Harper, C. H. K.	Up. 5	J. B. G.	July 57	5	4½	9	3½	22½	34½	9½	13½	Madras.
84	Hartley, R. A. T.	Up. 2	F. E. T.	Jan. 61	5	1½	6	6½	21½	28½	7½	11½	Dublin.
52	Harrison, (1) H. B.	6th F.	F. E. T.	Sept. 56	5	8½	9	3½	22½	31½	10	12½	Liverpool.
570	Harrison, (2) L. E.	Up. 3	F. E. T.	Mar. 60	4	10½	6	6½	21½	28	8½	12	Glo'stershire.
286	Hastings, (1) H. A.	Mod. U. (1)	A. B.	Sept. 56	5	7½	11	5½	22½	34½	11	15	Yorkshire.
153	Hastings, (2) G.	Mod. M. (2)	H. R.	June 60	4	9	6	3½	22	30	8	12	Yorkshire.
154	Hastings, (3) C.	Up. 2	H. R.	Oct. 61	4	10	6	7½	21	29½	8½	12½	Yorkshire.
467	Hayes, (1) S. H.	Up. 4 (b)	A. B.	Feb. 59	4	9½	6	0½	20½	26	7½	11½	Glo'stershire.
494	Hayes, (2) A. E.	Up. 2	Home-B.	Nov. 60	4	10	6	3½	21	28	8½	11½	Glo'stershire.
412	Hayward, A. E.	Up. 3	H. R.	Dec. 60	4	9½	6	3½	21½	30	8	11½	Wiltshire.
3	Heaven, F. G.	Up. 5	C. S.	Dec. 57	5	4½	9	4	23	32½	10½	13	Wiltshire.
31	Henn, S. H. H.	Mid. 4 (b)	E. W. M. L.	Dec. 61	4	7½	5	6½	21½	26½	7½	10½	Manchester.
504	Herbert, G. C.	Mid. 5	W. E. M.	Nov. 56	5	7½	9	13½	22	33	9½	13½	London.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
124	Higginson, C. R	Low. 5 (1)	C. S.	Oct. 58	5	8¼	11	5	23½	34	10½	14¼	London.
502	Highton, (1) A. H.	Mid 5	W. E. M.	Oct. 56	5	8¼	9	5¾	22¼	31½	9	13	Somersetshire.
310	Highton, (2) F. W.	Low. 4	C. W. B.	Nov. 61	4	6¼	4	12	20¼	26	6¾	9¾	Somersetshire.
254	Hill, R. M.	Low. 5 (2)	A. B.	Jan. 58	5	7¼	9	13	22	32	9¾	13½	Anglesea.
242	Hobhouse, A. H.	6th F.	C. W. B.	June 56	6	0½	11	3	22¼	33¾	10	13¾	Cornwall.
265	Hockin, (1) F. S.	Low. 5 (2)	E. W. M. L.	Aug. 57	5	5½	8	9½	20¾	30¾	9½	13	London.
28	Hockin, (2) G. T.	Up. 4. (a)	E. W. M. L.	Nov. 58	5	3¾	8	0½	21	32	8¾	12¼	London.
328	Hodgson, F. W.	Up. 4 (b)	A. H. B.	Aug. 60	5	0½	7	5	22½	28¾	8¼	12½	Surrey.
432	Hoffman, A. A.	Mod. M. (1)	C. S.	Nov. 57	5	4½	8	11¾	22¾	32½	9	13	Dublin.
315	Hogg, W. E.	Up. 4 (a)	J. B. G.	May 59	5	5½	7	9	20¾	29¾	8½	12	Surrey.
65	Hooper, F. G. F.	Mod. M. (2)	C. S.	July 59	5	2¾	7	4	21½	30½	8½	12¼	London.
533	Hopper, (1) E. C.	Mid. 5	W. E. M.	June 56	5	8¼	8	11	22¾	29	8½	12	Norfolk.
534	Hopper, (2), A. S.	Low. 5 (1)	W. E. M.	June 58	5	6¾	8	3¼	22¼	28½	8¼	12	Norfolk.
354	How, (1) H. W.	Low 5 (2)	H. A. J.	May 56	5	10¼	10	0¼	22¼	32¾	9½	13	Shropshire.
326	How, (2) A. W.	Mod. M. (2)	H. A. J.	May 58	5	7¼	9	8	22¼	33¼	9¾	13	Shropshire.
266	Hughes, W. G.	Mod. Low.	H. R.	May 59	4	10	6	0¼	21½	28	7½	11½	London.
382	Hunt, (1) W. H.	Mod. M. (1)	F. E. T.	Mar. 58	5	7	9	2	21½	31	8¾	12¾	Oxfordshire.
9	Hunt, (2) C. H.	Low. 5 (2)	A. H. B.	May 60	4	10¼	6	0	20¾	28¾	8	11¼	Worcestershire
264	Hunter, E.	Mod. Low.	H. R.	Nov. 58	5	6¼	9	2½	22½	32¼	9¼	13¼	Middlesex.
197	Ilbert, L. G.	Mid. 5	H. A. J.	Dec. 56	5	2¼	7	3½	21¼	27½	8½	12	Devon.
58	Ingram, (1) A. F. W.	Up. 5	H. A. J.	Jan. 58	4	9½	6	4	21½	29¾	7½	11¾	Worcestershire
19	Ingram, (2) G. F. W.	Mod. Low.	H. A. J.	Oct. 59	4	6	5	8	22	27¾	7¼	10¾	Worcestershire
121	Jackson, (1) F. D.	Up. 4 (b)	H. A. J.	June 59	5	6	10	6¼	22½	35½	11	14½	Hants.
316	Jackson, (2) R. W. M.	Low. Sh.	H. R.	June 60	5	0½	5	7½	22	30¾	8¾	12¼	London.

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		Form.	House.	Born.	Height. ft. in.	Weight. st. lbs.	Circumference of head. in.	chest. in.	arm. in.	leg. in.	Place of birth.
426	Jacson, (1) M. G.	Mod. Low.	H. A. J.	Sep. 59	4 10	6 2	22	27	7¼	11½	Herefordshire.
450	Jacson, (2) O. F.	Low. Sh.	Dr. F.	April 61	4 7	5 7	21	27½	7¼	10½	Herefordshire.
42	James, E.	Up. Sh.	H. A. J.	Aug. 57	4 11½	8 10½	22½	31½	8¼	13	Berks.
61	Jenkinson, G. S. C.	Low. 5 (2)	A. B.	Feb. 58	5 8½	8 9	21¾	31	8¼	13	Worcestershire
378	Johnson, C. F.	Up. 4 (a)	A. B.	Oct. 57	5 11½	10 1½	22¼	33	9¼	13	London.
430	Johnstone, (1) V. B.	6th F.	C. W. B.	Feb. 56	5 5½	9 10½	21¾	35½	10½	13¾	Sussex.
306	Johnstone, (2) C. J.	Mid. 5.	C. W. B.	June 57	5 4½	8 12½	21½	31¾	9¼	13¼	Sussex.
362	Jolly, S. B.	Mod. U. (2).	J. B. G.	Jan. 59	5 5	9 3¾	22¼	33½	9½	13	Somersetshire.
24	Kealy, J. W. G.	Mid 5	C. W. B.	April 58	5 6½	8 7½	21½	30½	9	12½	Hants.
230	Keary, H. D. U.	Mod. U. (1)	A. B.	April 57	5 8	9 2¾	20½	33¾	9¼	12¾	Norfolk.
208	Keith, A. C.	Low. 2	H. R.	Aug. 61	4 10½	6 8¾	22	29	8½	12	Norfolk.
377	Kekewich, L. P.	Up. 3	H. R.	Feb. 59	5 4	7 11½	21½	29½	8½	12	Warwickshire.
172	Kelly, R. M. B. F.	Mod. U. (1)	A. H. B.	Sep. 57	4 11½	8 1	21½	31	9¼	12¾	Dublin.
216	Kensington, A.	6th F.	A. B.	April 55	5 9½	9 7	22	33¾	9¼	13	Jersey.
475	Kimber, (1) F. C.	6th F.	A. H. B.	Sep. 55	5 9¾	10 12¾	23½	34	10½	14¾	Oxfordshire.
157	Kimber, (2) T.	Low. 2	T. A. P.	May 62	4 8	5 3	21½	27½	7	11	Oxfordshire.
152	King, H. C.	Up. Sh.	H. A. J.	June 57	6 0½	11 2	22½	34½	10½	14	Durham.
446	King-Salter, H. P.	Up. 2	C. W. T.	Mar. 61	4 9	5 4¾	21	26½	7½	10½	Shropshire.
525	Kirk-Patrick, (1) I.	Mid. 4 (b)	W. E. M.	May 60	4 11½	6 12¼	21¾	29	7¾	11½	Dublin.
456	Kirk-Patrick, (2) W.	Low. 3	Home-B.	April 62	4 7	5 6½	22	28½	7	10¾	Westmeath.
96	Kite, (1) J. B.	6th F.	C. W. B.	Jan. 57	5 9½	10 0¾	22	32¾	9	13	Warwickshire.
142	Kite, (2) R. W.	Low. 4	H. R.	Oct. 60	5 1½	7 2½	22	28	7½	12	Warwickshire.
21	Lander, (1) J. A.	Low. 5 (2)	H. A. J.	Dec. 57	5 2¾	7 2¾	21¾	28	8	12	Herefordshire.
223	Lander, (2) R. E. F.	Mid. 4 (b)	H. A. J.	Mar. 59	5 8½	10 2¼	22¾	32½	10	13½	Herefordshire.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
579	Larkworthy, F. B.	Low. 4	F. E. T.	Dec. 59	5	1½	6	12½	21¾	29	7½	11¾	Australia.
505	Laurie, E. H.	Low. 3.	W. E. M.	Oct. 60	5	0½	6	10¾	22	29	7¾	11¾	Kent.
442	Laver, F. K.	Mod. Low.	Dr. F.	July 60	4	11	6	0¾	20½	27¾	7½	11½	Surrey.
287	Levers, A. C.	Mod. Low.	A. H. B.	Jan. 60	4	11	7	0½	21½	29½	8¾	12½	Surrey.
218	Lawford, (1) L. C.	Mod. U. (1)	H. A. J.	June 57	5	7½	10	1	22½	34	10	13¾	Middlesex.
355	Lawford, (2) G. M.	Mod. Low.	H. R.	Nov. 60	4	10½	6	0¾	20	27½	7½	11½	Surrey.
167	Lawless, (1) W. H. E.	Low. 4	Dr. F.	Oct 58	4	8¾	6	1½	20½	28	8	11½	Dublin.
168	Lawless, (2) S. E. G.	Low. 3	H.R.	Sep. 60	4	6¾	5	0¾	21	27	7½	10½	Dublin.
327	Leach, (1) W.	Up. 4 (b)	C. S.	Nov. 58	5	0¾	7	4½	22½	30	8½	12½	Lancashire.
269	Leach, (2) S. H.	Low. Sh.	Dr. F.	Mar. 60	5	1½	6	13¾	21½	31½	8¼	11¾	Lancashire.
245	Lee, (1) J. H. W.	6th F.	H. A. J.	April 55	5	5½	8	6¾	21¾	30½	8¾	12½	Shropshire.
14	Lee, (2) F. H.	6th F.	A. B.	Sep. 55	5	9½	10	10¾	21¾	34½	10¾	14¼	London.
491	Lee, (3) F. L.	Mod. M. (1)	Dr. F.	June 60	4	9	6	0½	20¾	27½	7½	11¾	London.
498	Lee, (4) H. C.	Low. Sh.	Dr. F.	Oct. 61	4	8¾	6	5	21	29½	7¾	11½	London.
134	Lefroy, (1) G.A.	6th F.	C. W. B.	Aug. 54	5	8½	10	3¾	22⅞	32½	10	13½	Down.
255	Lefroy, (2) F. P.	Mid. 5	C. W. B.	Jan. 57	5	6½	8	2¾	22	31½	9	12	Down.
292	Lefroy, (3) E. H.	Mid. 4 (b)	C. W. B.	Jan. 59	5	0½	6	8¾	22½	28	7¾	11½	Down.
149	Legh, (1) H. C.	Mod. U. (1)	C. S.	Mar. 58	5	1½	7	4½	22	31½	8½	12	Malta.
150	Legh, (2) S. C.	Mid. 4 (a)	C. S.	Oct. 61	4	9¾	6	6	21	28½	8½	11¾	Malta.
126	Leigh, F.	Up. Sh.	A. B.	July 57	5	2½	9	4	22½	33½	11	14	Middlesex.
175	Leveson, E. J.	Up. 3	Dr. F.	May 61	4	10½	6	1½	21½	27	7¾	11	Singapore.
48	Lewis, (1) F. J.	6th F.	H. A. J.	Sep. 55	5	3½	9	1¼	22½	35	10¾	14	Flintshire.
166	Lewis, (2) E. A.	Mid. 4 (a)	H. A. J.	April 60	5	0¾	7	3	21½	28½	8	12½	Flintshire.
50	Lewis, (3) T. H.	Mod. L. D.	H. A. J.	May 60	4	5¾	5	5½	21½	27½	8	11	Flintshire.

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		Form.	House.	Born.	Height. t. in.	Weight. st. lbs.	Circumference of head. in.	chest. in.	arm. in.	leg. in.	Place of birth.
86	Lindesay, W. O'N.	Up. 5	A. H. B.	Jan. 57	6 0½	10 4½	21⅞	32½	9½	13½	Londonderry.
548	Littledale, W. A.	Low. 5 (2)	W. E. M.	Aug. 57	5 8½	10 7½	22	33½	10½	13¾	Yorkshire.
51	Longman, (1) R.	Up. 4 (b)	F. E. T.	Nov. 56	5 9½	10 1½	22½	32½	9¾	13	Hants.
192	Longman, (2) A.	Mid. 4 (b)	F. E. T.	Oct. 58	5 2	6 2	21½	27	7½	11	Hants.
229	Loring, N.	Mid. 5	E. W. M. L.	Feb. 57	6 0¾	11 7½	22½	36	10	14	Surrey.
526	Lowndes, W.	Up. 4 (a)	W. E. M.	Aug. 58	5 3½	7 3½	20¾	28	7¾	12	Cheshire.
249	Lucas, (1) H. T.	Mod. Low.	F. E. T.	Oct. 58	5 3½	9 3	21½	31	9½	13½	Surrey.
250	Lucas, (2) F. M.	Up. 3	F. E. T.	Feb. 60	4 9½	6 5¾	21½	28¾	7¾	10¾	Surrey.
120	Lucas, (3) E. L.	Low. 3	F. E. T.	Feb. 60	5 4	8 8¾	21½	31	8¾	13½	Surrey.
35	Mackarness, F. M. C.	6th F.	A. H. B.	Aug. 54	5 7⅞	10 9¾	23½	33	11¼	14½	Worcestershire
537	MacComas, J. E.	Low. 4	W. E. M.	April 60	5 0½	6 9	20¾	29	7¾	11¼	Surrey.
10	MacGregor, A. P.	Mod. U. (2)	C. W. B.	May 58	5 10	9 13½	22½	33¼	9¼	13½	London.
562	Mackenzie, T. A.	Mid. 4 (b)	J. B. G.	Sep. 59	5 0¾	6 6½	21	27	7¾	11½	Rosshire.
69	Mackintosh, (1) W. L.	Mod. U. (2)	C. W. B.	Aug. 59	5 1	6 12½	21½	29¾	7½	12	Inverness.
94	Mackintosh, (2) G.	Mid. 4 (a)	C. W. B.	Aug. 60	5 1½	6 12	21½	27½	7¾	11¾	Inverness.
466	Manders, N.	Up. 3	Home-B.	Dec. 59	5 2	7 0¾	21	28½	8	11¾	Wiltshire.
27	Mann, (1) C. G. H.	Low. 5 (2)	A. H. B.	Sep. 56	5 10½	10 13	23	35½	9½	14	Cornwall.
256	Mann, (2) H.	Up. 3	H. R.	Nov. 60	4 11¼	6 13½	21¾	29½	8	12¼	Cornwall.
572	Marcet, A.	Mid. 4 (b)	J. B. G.	Jan. 59	5 3¼	7 13	21½	30½	8¼	11¾	London.
23	Margetts, A. E.	Mod. U. (1)	A. H. B.	Dec. 56	5 7½	10 7	22½	33½	9¾	14¼	Surrey.
565	Marshall, E. S.	Low. 5 (1)	J. B. G.	Mar. 58	5 5½	8 9½	21½	30½	8¼	12½	London.
408	Martin, E. P.	Low. 3	H. R.	Oct. 60	4 9½	6 0¾	20¾	27½	7½	11¼	Kent.
127	Mason, F. G. M.	Mid. 5	A. H. B.	Nov. 55	5 4⅞	9 9¾	22	35¼	10½	13¾	Somersetshire.
107	Maud, W. deS.	Low. 5 (1)	H. A. J.	June 57	5 5¼	7 9½	21½	28½	8¼	12½	Northants.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
160	May, F. M.	Up. 4 (b)	C. W. B.	Aug. 59	5	1½	6	13	21½	29⅜	8½	11⅜	Somersetshire.
82	McCarogher, E. J. C.	Mod. Low.	E. W. M. L.	July 59	4	11	7	0½	22	29	8½	12½	Sussex.
243	Melhuish, H. A.	Mod U. (1)	H. A. J.	June 58	5	3¼	8	8	22	32½	8¼	13	Cheshire.
335	Melitus, P. G.	Mid. 5	E. W. M. L.	Mar. 58	5	2¼	8	13¾	21½	31	10	13	Bengal.
290	Melville, B. V.	Up. 5	H. A. J.	Sep. 57	5	3⅜	7	6½	22½	29½	8¾	12¾	Worcestershire
566	Mercer, J. B.	Low. 4	J. B. G.	Sep. 60	5	0½	6	9¾	21½	29½	7⅜	11½	Middlesex.
289	Mew, F. T.	Mod. M. (1)	E. W. M. L.	Oct. 57	5	5	8	12½	22	33	9½	13½	Isle of Wight.
429	Meyrick, (1) A. G.	Mod. U. (1)	A. B.	May 56	5	2½	7	8½	22	30½	8½	12¾	Wiltshire.
128	Meyrick, (2) F. O.	Mod. M. (1)	A. B.	Feb. 59	5	0⅛	7	5½	21½	29½	8½	12½	Wiltshire.
15	Middleton, B. B.	Mod. M. (1)	A. H. B.	Dec. 58	5	7½	9	7½	21½	33½	10	13	Cumberland.
561	Mill, J.	Mod. M. (1)	W. E. M.	Sep. 58	5	7	10	0	22¾	34½	9¾	13	Devon.
212	Millard, P. C.	Low. 2	H. R.	Mar. 63	4	7	5	10½	20¾	28	8	11	Middlesex.
576	Mills, B. L.	Mid. 4 (a)	T. A. P.	June 61	5	1	7	5½	21½	29½	8½	12½	Somersetshire.
414	Milner, W. M. H.	Mid. 5	C. S.	April 59	4	10¾	6	7¾	21½	29	7¾	11½	Ayrshire.
186	Moore, H. S.	Up. 3	H. R.	Dec. 61	4	7	6	3¾	21¼	28½	9	12	Somersetshire.
386	Mould, J. M. L.	Mid. 4 (b)	F. E. T.	Oct. 57	5	3¾	7	8¼	21	30	8	11¾	Middlesex.
349	Murphy, C. W.	Low. 3	Home-B.	Feb. 60	5	3¾	7	8½	22	30	8¾	12	Cork.
211	Murray, (1) A. T.	Up. Sh.	C. W. B.	Oct. 58	5	8½	9	9½	21½	32	9½	13½	London.
257	Murray, (2) K. W.	Low. 4	H. R.	July 60	5	0½	6	11¾	20¾	29½	8½	12	London.
433	Napier, J. R.	Mid. 4 (b)	H. A. J.	Jan. 59	4	11¼	6	13	21½	30	8¼	11¾	Lancashire.
118	Nash, S. P.	Up. Sh.	H. A. J.	June 57	5	10½	9	10¼	22	34¾	10½	13	Glo'stershire.
388	Nelson, (1) J. O.	Up. 4 (a)	F. E. T.	Nov. 59	4	11⅞	6	11	20¾	29	8	11¾	London.
578	Nelson, (2)	Mid. 4 (a)	F. E. T.	Aug, 61	4	4¾	5	7½	20¾	27	8	11¼	London.
481	Nevill, E. W.	Low. 4	Home-B	June 59	4	11¼	6	10¾	22	28¾	7½	11	Carmarthensh.

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		Form.	House.	Born.	Height. ft. in.	Weight. st. lbs.	Circumference of head. in.	chest. in.	arm. in.	leg. in.	Place of birth.
479	Newby, G.	Up. 4 (a)	J. B. G.	Feb. 58	5 4	8 3½	22½	31	9	12¾	Durham.
1	Newman, E. F.	Up. 4 (a)	H. A. J.	Mar. 59	5 0½	6 4¾	21½	28½	7½	11¾	Devon.
260	Nicholson, T. H.	Mid. 4 (a)	E. W. M. L.	July 60	5 1¾	6 11½	21½	30	8	11	Somersetshire
155	Norris, (1) S. L.	Low. 5 (1)	E. W. M. L.	Mar. 59	5 1¾	6 6¾	21¾	27½	7¾	11½	London.
179	Norris, (2) E. J.	Up. 4 (a)	E. W. M. L.	June 60	4 11½	6 3½	20½	28½	7½	11½	Staffordshire.
182	Oakley, A. S. B.	Low. 4	C .W. B.	Mar. 61	4 11¾	6 2½	20½	26½	7¾	11	Glo'stershire.
372	Oliver, D. E.	Low. 5 (2)	C. S.	Feb. 59	4 10½	6 7½	21¾	28	7½	11½	Norfolk.
365	Palmer, F. F.	Up. 2	C. W. T.	Aug. 61	4 7½	5 5½	20½	26½	7	11	Madras.
56	Paul, L. F.	Low. 3	H. R.	Jan. 61	4 10½	5 12	20½	28½	7½	11½	Glo'stershire.
75	Peacock, (1) R.	Up. Sh.	E. W. M. L.	Dec. 57	5 7½	9 7½	21¾	33½	10	13½	Wiltshire.
333	Peacock, (2) F. M.	Up. 2	H. R.	Mar. 61	4 8¾	5 9½	21½	28½	8½	11	Wiltshire.
253	Peake, R.	Mod. M. (1)	H. A. J.	April 57	5 6¾	9 3½	21¾	32½	9½	12¾	Glo'stershire.
225	Peel, (1) H.	Up. 4 (a)	A. H. B.	Sep. 57	5 4¾	7 11½	22	30	8½	12	London.
280	Peel, (2) S. W.	Mod. M. (2)	E. W. M. L.	Oct. 57	5 4¾	11 1½	22½	36	11½	14	Gibraltar.
577	Peele, R. deC.	Up. (2)	T. A. P.	July 62	4 9½	5 13½	20¾	27	7¾	11½	Staffordshire.
220	Pemberton, S. B.	Mod. M. (2)	C. W. B.	Nov. 58	5 0½	6 9¾	21	29½	8	11½	London.
554	Penlington, C. B.	Mod. U. (1)	F. E. T.	Dec. 58	5 3½	7 13½	21	31¾	8¼	12½	London.
64	Penruddock, F. F.	Low. 4	H. R.	Jan. 62	4 9½	5 12¾	21¼	26¼	7¼	11	Wiltshire.
222	Phelps, T. J.	Low. 5 (2)	A. H. B.	May 58	5 0½	7 6½	21½	29½	8½	12½	Wiltshire.
332	Philpot, H. S.	6th F.	A. B.	Dec. 55	5 11½	9 1	21¾	32½	8½	12½	Lincolnshire.
109*	Pierson, J. E.	Low. 5 (2)	E. W. M. L.	Aug. 58	5 9¾	10 5	22¼	31½	10	11¼	Yorkshire.
423	Pinder, J. G.	Mid. 5	E. W. M. L.	Mar. 57	5 5½	8 11¾	22½	30¾	9¾	12¾	Devon.
214	Pomfret, H. W.	Mod. M. (1)	C. S.	Mar. 58	5 3¾	9 0	21½	31½	9½	13½	Cheshire.
11	Powles, A. H.	6th F.	C. W. B.	April 57	5 4¼	9 3½	22½	33	9¾	13½	Herefordshire

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
465	Preston, D. B.	Up. 3	T. A. P.	July 60	5	0½	7	10	21½	30½	9	12½	Kent.
375	Prichard, H. S.	Low. 4	H. R.	June 60	5	3	7	4½	21½	28	8	12½	Somersetshire
453	Probyn, J. E. S.	Mid 4 (b)	F. E. T.	Dec. 59	5	2½	7	1	21½	29½	8	12½	Surrey.
258	Prothero, M. E. D.	Up. 5	F. E. T.	Dec. 56	5	8½	10	10	24½	34½	9½	13½	Isle of Wight.
106	Purdon, C. S.	Low. 5 (2)	A. B.	June 57	5	7½	10	8½	22½	33½	10½	14½	Westmeath.
259	Pym, (1) W. F.	Up. Sh.	H. A. J.	July 58	4	11½	6	13½	21½	28	8½	12	Devon.
185	Pym, (2) F. H.	Mod. M. (1)	H. R.	Aug. 60	4	8½	6	4	21½	29½	8½	11½	Devon.
389	Pyrke, R. D.	Mod. U. (2)	F. E. T.	Jan. 58	5	5	9	1½	21½	30½	9½	13½	Glo'stershire.
488	Radcliffe, G. A.	Up. 5	Home-B.	Feb. 56	5	4½	9	2½	22	32½	9½	13½	Wiltshire.
398	Radford, J. R.	Low. 5 (1)	F. E. T.	May 57	5	2½	8	10½	22	32½	10½	13½	Liverpool.
313	Raymond, H. W.	Mid. 4 (b)	J. B. G.	April 61	5	1	6	6½	21½	27½	7½	11	Surrey.
394	Rayner, R.	Low. Sh.	Dr. F.	Oct. 61	4	7	5	7	21	28½	8½	11½	Lancashire.
553	Richardson, J. O.	Mid. 4 (b)	F. E. T.	July 58	5	4½	7	11½	21½	30½	8½	12½	Antrim
346	Rider, J. E. W.	Low. 4	E. W M. L.	Aug. 59	4	9½	6	3½	21	28½	7½	11½	Salop.
298	Roberts, L. R. H.	Mod. M. (2)	H. A. J.	Dec. 58	5	4½	9	0	21½	33	9½	12½	Denbighshire
558	Robertson, J. A.	Mod. M. (2)	J. B. G.	Sep. 60	4	10½	6	5	22	30½	8	12½	Bengal.
188	Robinson, W. S.	6th F.	C. W. B.	May 57	5	7½	8	12½	21½	30½	8½	13	Surrey.
436	Rogers, (1) J. D.	6th F.	J. B. G.	Feb. 57	5	7½	9	10	22½	33	9½	13½	Herefordshire
71	Rogers, (2) W. F.	Up. 4 (b)	A. B.	Jan. 59	5	1½	7	1½	21½	28½	8	12½	Liverpool.
5	Rogers, (3) G. S.	Up. Sh.	C. S.	Mar. 59	5	0½	7	11	22	31½	8½	12½	Cornwall.
132	Rogers, (4) H. T.	Mid. 4 (a)	C. S.	Aug. 60	5	6½	5	10½	20½	27	7½	11½	Cornwall.
574	Rooke, (1) R. W.	Up. 3	J. B. G.	June 61	4	9½	5	7½	21½	27½	8½	10½	Dorsetshire.
575	Rooke, (2) F. E.	Low. 3	J. B. G.	June 62	4	9	5	4½	20½	27½	7½	10½	Dorsetshire.
383	Rowe, (1 H. A.	Low. 5 (2)	J. B. G.	Feb. 57	5	8½	10	4	23	32½	10½	11	Liverpool.

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		Form.	House.	Born.	Height. ft. in.	Weight. st. lbs.	Circumference of head. in.	chest. in.	arm. in.	leg. in.	Place of birth.
424	Rowe, (2) G. D.	Up. 5	J. B. G.	Dec. 57	5 10½	10 8	21½	33½	10½	14½	Valparaiso.
419	Rowe, (3) B. D.	Mod. U. (2)	J. B. G.	May 58	5 6½	9 1½	22½	33½	9½	12½	Cheshire.
567	Rowe, (4) W. E.	Mid. 4 (b)	J. B. G.	Mar. 59	4 9½	6 10½	21	28½	8½	12	Valparaiso.
384	Sadler, M. J.	Up. Sh.	E. W. M. L.	Sep. 57	5 7½	9 5½	22½	32½	9½	12½	Somersetshire
379	Salmon, W. J. B.	Mod. U. (2)	F. E. T.	May 57	5 7½	9 5½	22	32½	9½	13½	Jamaaci.
177	Salusbury, N.	Up. 3	C. W. T.	Mar. 59	5 1	7 13	22	29½	9	12½	Hants.
371	Samborne, A. J. S. P.	Up. 5	A. H. B.	June 56	5 10½	10 12½	22½	33	10½	14½	Devon.
4	Sanders, F. A.	Mid. 5.	H. A. J.	Mar. 56	5 6½	10 3½	23	32½	10½	14½	Devon.
161	Sanderson, J. H.	Mod. U. (2)	C. W. B.	Oct. 57	5 3½	7 12	21½	30½	8	12½	Cheshire.
413	Sankey, A.	Mod. U. (2)	C. W. T.	Nov. 58	5 0½	7 5½	21½	29	8½	11½	Hants.
423	Savile, G. W. W.	Low. Sh.	Dr. F.	Mar. 60	5 1	6 7½	20	28	8½	11½	Devon.
232	Scamell, F. E.	Up. 2	H. R.	Aug. 61	4 6	5 10	21	29	8	11½	Wiltshire.
392	Scott, H. D.	Up. 4 (b)	F. E. T.	Jan. 58	5 6½	8 12½	22	31½	9½	12½	Middlesex.
111	Shirley, (1) L. J.	Mod. U. (2)	C. W. B.	April 57	5 9	10 0½	21	33	9½	13½	Hertfordshire
131	Shirley, (2) W. R.	Up. Sh.	C. W. B.	June 59	5 3½	7 6½	20½	29½	8½	12	Hertfordshire
410	Showell, C. H.	Mod. U. (2)	C. W. T.	Jan. 58	5 4½	8 2½	21½	30	8½	11½	Shropshire.
213	Silver, E. W.	Low. 3	H. R.	Nov. 62	4 10½	6 1½	22½	28	7½	11½	Isle of Wight
530	Sim, (1) A. C.	6th F.	W. E. M.	Oct. 55	6 1½	11 12½	21½	35½	10½	13½	Surrey.
529	Sim, (2) S.	Up. 4 (a)	W. E. M.	Dec. 58	5 7½	9 2	21	31½	9	12½	Surrey.
369	Simons, C. E.	Mod. M. (2)	F. E. T.	July 57	5 3½	8 3½	22	30½	8½	13½	Warwickshire
299	Simpkinson, E. F.	Low. 5 (2)	A. B.	June 59	4 10½	7 1	21½	28½	8½	12½	Northants.
80	Simpson, R. W.	Up. 4 (b)	A. B.	Nov. 58	5 0½	6 0½	21½	27½	7	10	London.
236	Skrine, W. D.	Low. 5 (2)	C. S.	Mar. 57	5 5½	9 3½	21½	31	9½	13½	Berks.
133	Smelt, H. J. C.	Mod. M. (1)	H. A. J.	April 58	5 0	6 8	20½	28½	8	11½	Wiltshire.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
357	Smith, (1) E. C.	6th F.	A. H. B.	Jan. 57	5	11½	10	8	22½	33½	10	13½	Herefordshire
33	Smith, (2) G. G.	Mod. M. (2)	C. S.	Aug. 58	5	5	8	11	22½	31½	9½	12½	London.
353*	Smith, (3) H. M.	Low. 4	H. R.	Jan. 59	5	4½	9	0½	22½	32½	10½	14½	London.
359	Smith, (4) H. S.	Up. 4 (a)	J. B. G.	Jan. 59	5	0½	7	1½	21½	27½	8½	11½	Surrey.
514	Smith, (5) H. L.	Up. 4 (b)	W. E. M.	April 59	5	3½	8	0	21	30	8½	11½	Norfolk.
237	Smithe, (1) A. D.	Up. 4 (b)	C. S.	Nov. 58	5	2½	7	0½	21½	29½	8	11½	Brighton.
238	Smithe, (2) P. B.	Mid. 4 (a)	C. W. B.	Sep. 60	5	0½	6	6½	21½	27½	7½	12½	Brighton.
63	Soden, A. H. S.	Mod. M. (1)	F. E. T.	June 57	5	2½	8	1	21	31	8½	12½	Somersetshire
78	Speck, J. H.	Up. 4 (b)	C. S.	Dec. 57	5	7½	8	3½	21½	29	8	12	London.
522	Spencer, J. C.	Mod. Low.	W. E. M.	Sep. 59	4	7½	6	7	20½	30½	8½	11½	Northum'land
159	Square, (1), J. E.	Up. 4 (b)	H. A. J.	Oct. 58	5	4½	9	0½	22½	31	9½	13½	Devon.
200	Square, (2) C.	Low. 3	H. R.	Feb. 60	5	0	8	0	22	29½	9½	14	Devon.
178	Stanton, E. C.	6th F.	A. B.	June 57	5	7	11	8½	24½	37½	11½	15½	Glo'stershire.
338	Starky, G. B.	Mod. M. (2)	E. W. M. L.	April 58	5	4½	9	5½	22	33	9½	14	Wiltshire.
376	Steel, A. G.	Up. 4 (b.)	W. E. M.	Sep. 58	5	3½	8	12	21½	30½	9½	13½	Liverpool.
477	Steele, St. G. L.	Up. 4 (b)	F. E. T.	Mar. 59	5	1½	7	2	20½	29½	8	11½	Burmah.
448	Stephenson, (1) E. H. C.	Low. 4	Home-B	Nov. 58	5	1½	7	2	21½	28	8½	12½	Somersetshire
93	Stephenson, (2) B. C.	Up. 4 (a)	C. S.	Feb. 59	4	11½	7	4½	22	31	8½	11½	Dorsetshire.
356	Stevens, C. E.	Low. 2	Dr. F.	Aug. 63	4	7½	5	6½	22	28	7½	12	Middlesex.
274	Stewart, A. B.	Up. 2	H. R.	Sep. 60	4	7	5	11	20½	27½	8½	11½	Dublin.
92	Stubbs, M. R.	Mod. Low	F. E. T.	Jan. 60	5	2½	8		21½	30½	8½	13	London.
158	Sutton, L.	Low. 2	H. R.	Aug. 62	4	7½	6	1½	21½	29	8	12½	Sussex.
364	Sweet, W. M.	Mod. Up. (2)	C. S.	May 57	5	4½	8	12½	21½	33	10½	12½	Somersetshire
26	Tait, D.	Mid. 4 (a)	A. H. B.	Sep. 62	4	9½	6	4½	21½	28	7½	11½	Wiltshire.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
272	Tanner, (1) A.	Up. 4 (b)	C. S.	May 57	5	9½	10	5½	22	32½	9	13½	Wiltshire.
89	Tanner, (2) G. F.	Mod. Up. (2)	A. H. B.	Oct. 59	4	11½	6	11½	22½	28½	8½	11½	Wiltshire.
163	Tatham, (1) G. J.	Up. 4 (a)	A. H. B.	Oct. 58	5	6½	9	4½	21½	31½	9½	13½	Cornwall.
91	Tatham, (2) G. A. R.	Low. 4	C. W. B.	Aug. 60	5	1½	7	11½	21½	31	8½	11½	Norfolk.
67	Tatham, (3) W. M.	Up. 2	H. R.	July 62	4	8½	6	7	22	29½	8½	11½	Norfolk.
440	Tayler, A. F.	Up, 4 (b)	Home-B.	July 57	4	9½	5	6½	20	27	6½	10½	Wiltshire.
240	Taylor, A. W.	Mod. M. 1	C. S.	July 57	5	5½	8	8½	22	33	9½	13½	Devon.
472	Templer, (1) J. M.	Mod. M. (2)	J. B. G.	May 58	5	3½	8	1½	21	31	9	12½	Devon.
544	Templer, (2) A. H.	Low. 3	J. B. G.	Sep. 59	5	3	8	2½	21	31	9	13	Devon.
95	Thatcher, H. W.	Up. Sh.	C. S.	Nov. 58	5	5½	9	0	21½	30½	8½	13½	Surrey.
165	Thicknesse, P. C.	Low. 3	H. R.	Jan. 60	4	11½	7	4	22	30½	9	12	Lancashire.
288	Thirlwall, F. H.	Up. 4 (b)	H. A. J.	Aug. 57	5	5½	8	11½	21½	30½	9½	12½	Shropshire.
538	Thompson, (1) H.F.H.	Up. 5	W. E. M.	April 59	4	10½	6	4½	20½	28½	7½	11½	London.
198	Thompson, (2) H.T.A.	Low 5 (2)	A. B.	Dec. 58	5	5½	8	5½	21½	30½	9	12½	Glo'stershire.
122	Thomson, (1) G. C.	Mid. 5	A. B.	April 58	5	5½	8	10½	21½	31½	8½	13	Sussex.
367	Thomson, (2) H. R.	Mid. 5	A. B.	Aug. 60	4	11½	7	8½	21½	29½	8	13	Sussex.
330*	Thornton, L. M.	Up. 5	J. B. G.	Aug. 58	5	6	7	11½	22½	28½	8½	12½	Surrey.
49	Thring, C. H. M.	Mid. 4 (b)	H. R.	Jan. 61	4	8	5	13½	21	28	7½	11	Rutland.
156	Thurnam, A. H.	Low. 5 (1)	C. S.	June 57	5	4½	8	10½	21½	31½	9½	13½	Wiltshire.
312	Tillard, H. C.	Mid. 5	H. A. J.	June 58	5	8½	9	11½	22½	32½	10½	13	Cambrig'shire
407	Todd, (1) W. N.	Up. 4 (a)	C. W. T.	Jan. 59	5	6½	8	9½	22½	29½	8½	12½	Lincolnshire.
484	Todd, (2) H. H.	Up. 3	C. W. T.	April 60	5	2½	8	1½	22	31½	8½	13½	Lincolnshire.
231	Tombe, H. E.	Mid. 4 (b)	J. B. G.	April 60	5	1½	6	6½	21	29	7½	11½	Wicklow.
210	Toms, L. W.	Low. 5 (1)	E. W. M. L.	Dec. 57	5	5½	7	13½	21½	29½	8½	12½	Devon.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
113	Topham, E. C.	Low. 4	H. R.	Mar. 60	5	3½	7	2½	21	29½	8½	11½	Warwickshire
219	Tottenham, P. J. L.	Mid. 4 (a)	H. A. J.	Nov. 58	5	2½	7	5½	22½	32½	8	12	Armagh.
207	Townsend, A. E.	Low. 3	H. R.	July 60	5	0	7	2	21	30	8½	12	Wiltshire.
552	Tryon, C. R.	Mod. M. (1)	F. E. T.	Oct. 57	5	8	10	0	21	30½	9½	13½	Warwickshire
560	Turner, A. J. H.	Up. 2	F. E. T.	Nov. 60	4	8½	6	2½	22	29½	8½	11½	Suffolk.
278	Towpeny, R. E. N.	Low. 5 (1)	E. W. M. L.	Aug. 57	5	5½	10	6½	21½	32½	10½	14½	Rutland.
116	Urquhart, M. A. P.	Mod. M. (2)	H. A. J.	May 59	5	3	7	5½	21½	30	8½	12½	Westmeath.
123	Vassall, (1) R. L. S.	Mid. 5	C. W. B.	April 58	5	6½	9	1	21½	31½	9½	12½	Somersetshire
2	Vassall, (2) H.	Up. 4 (b)	C. W. B.	Oct. 60	5	2½	8	13½	22½	31½	9½	14	Yorkshire.
97	Vigne, F. D.	Mid. 4 (a)	A. H. B.	April 59	5	3½	8	4½	21½	31½	9	12½	Middlesex.
88	Wall, T. W.	6th F.	A. H. B.	Mar. 55	5	4½	10	7½	22½	34	11½	14½	Armagh.
32	Walters, C. S.	Low. 5 (2)	H. A. J.	May. 59	5	6½	8	3	22	30½	8½	12½	Surrey.
493	Ward, (1) W. H. K.	Low. 5 (1)	Home-B.	Feb. 57	5	4½	7	11½	22	29½	8	12	Dresden.
489	Ward, (2) H. H.	Mid. 4 (b)	Home-B.	April 57	5	6	9	11½	22	33½	10½	14½	Staffordshire.
497	Ward, (3) A. H. K.	Up. 4 (b)	Home-B.	Sep. 58	5	0½	7	3½	22	30½	8½	11½	Austria.
563	Ward, (4) H. W.	Up. 3	W. E. M.	June 59	5	0	6	2½	21½	28	8	11½	Glo'stershire.
144	Ward, (5) A. G.	Up. 3	H. R.	Nov. 59	4	10	6	10½	21½	28½	8½	12	London.
279	Warden, E. J. P.	Mod. M. (2)	A. H. B.	Dec. 53	4	10½	5	9½	20½	28	7½	10½	India.
81	Wardrop, J. D.	Mod. Low.	C. W. B.	June 58	5	7½	8	13½	22	30½	8½	13½	London.
37	Watson, (1) E. G.	Low. 5 (1)	E. W. M. L.	Dec. 58	5	1½	7	1	20½	29½	8½	11½	Middlesex.
547	Watson, (2) A. E.	Mod. M. (2)	W. E. M.	Aug. 59	5	1	7	0½	21½	31½	8½	12	London.
468	Weber, F. B.	Up. Sh.	F. E. T.	Oct. 58	4	11½	6	0½	22	27	7½	11½	London.
248	Weldon, E.	Low. Sh.	H. R.	Jan. 61	4	7	5	12	20½	28½	7½	11½	London.
221	West, H. H.	6th F.	A. H. B.	Dec. 56	5	7½	9	11½	23½	33	9½	13½	Dublin.

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		Form.	House.	Born.	Height. ft. in.	Weight. st. lbs.	Circumference of head. in.	chest. in.	arm. in.	leg. in.	Place of birth.
428	Weston, G. H.	Mid. 4 (a)	Home-B.	Nov. 60	5 3½	7 10	22½	29	7½	12½	Dorset.
350	White, (1) A. V.	6th F.	J. B. G.	Mar. 56	5 7½	9 10½	21½	32½	9½	13	Kent.
456	White, (2) W. D. B.	Low. 5 (1)	E. W. M. L.	May. 57	5 5½	8 13½	20½	31½	9½	13	Hertfordshire.
114	White, (3) H. S. M.	Up. 3	H. R.	July 62	4 6½	5 9½	21	26½	8½	11½	Norfolk.
261	Whiting M. N.	Up. Sh.	C. W. B.	June 58	5 4½	8 12½	21½	30½	9	13	Surrey.
527	Wickham, A. P.	6th F.	W. E. M.	Nov. 55	5 8½	10 3½	22½	33	10	14	Surrey.
473	Wilbraham, H. A.	Mod. U. (2)	J. B. G.	Dec. 58	4 11½	7 6½	21½	29	8½	12½	Surrey.
344	Wilkinson, (1) W. H.	Up. Sh.	C. W. B.	Dec. 57	5 1½	8 7	22½	33½	10	13	Wiltshire.
87	Wilkinson, (2) J. Du C.	Up. 3	H. R.	May 60	4 8½	5 10½	21½	28	7½	11	Wiltshire.
528	Wilkinson, (3) R. J.	Low. 3	W. E. M.	Oct. 59	4 11½	6 6½	21	29	7½	11½	Lancashire.
532	Wilkinson, (4) W. H.	Low. 3	W. E. M.	Oct. 59	4 9½	6 2	21	27	8	11½	Lancashire.
321	Williams, (1) W. H.	Mod. M. (1)	C. W. B.	April 57	5 6½	8 3	21	32	8½	11½	Monmouthsh.
404	Williams, (2) H. R.	Low. 5 (1)	C. W. B.	Dec. 58	5 1½	8 0½	22½	31½	8½	13	Bucks.
508	Williams, (3) E. T. L.	Low. 4.	W. E. M.	July 59	4 5½	6 13	21½	30	8½	12	Merioneth.
83	Williams, (4) J. E.	Low. 2.	H. R.	Dec. 62	4 7½	5 7½	21	28	7½	11	Monmouthsh.
400	Willoughby, A. F.	Low. 5 (1)	C. W. B.	July 57	5 6½	10 3½	22½	34	9½	14	Notting'shire
194	Wilson, (1) G. P.	Mod. U. (1)	A. H. B.	June 57	5 7½	9 9½	21½	32	9	13½	New York.
115	Wilson, (2) C. P.	Low. 5 (1)	A. H. B.	May 59	5 2½	8 1½	21½	30	8½	12½	Norfolk.
305	Wilson, (3) R. C.	Up. 4 (a)	C. S.	Aug. 59	4 10½	6 4½	21½	27½	8	11	Liverpool.
34	Wilson, (4)	Mid. 4 (a)	A. H. B.	May 61	4 9½	6 0½	21	27½	7½	11½	Norfolk.
66	Woollaston, S. S.	Low. 4	H. A. J.	May 59	5 6	8 9½	21½	31	8½	12½	Surrey.
515	Womersley, (1) N.	Mod. Low.	W. E. W.	Feb. 59	5 4½	8 12	21½	30½	9½	14½	Essex.
509	Womersley, (2) D.	Low. 3	W. E. M.	July 60	4 8½	6 4½	22	28½	8½	12½	Essex.
457	Wood, R. S.	Up. 3	H. R.	Mar. 60	4 10	5 13½	21	27	8	11½	London.

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		Form.	House.	Born.	Height. ft.	in.	Weight. st.	lbs.	Circumference of head. in.	chest. in.	arm. in.	leg. in.	Place of birth
164	Woodward, F. F.	Mod. Low.	A. B.	Sep. 58	5	1½	6	9½	22	28½	7½	11½	Wor'stershire
342	Woollcombe, C. L.	Mid. 5	H. A. J.	Mar. 57	5	11½	12	5½	22½	35½	11½	14½	Devon.
347	Woolley, P. W.	Up. 2	T. A. P.	Oct. 60	4	11	6	3½	22	28	7½	11½	Brighton.
486	Worship, W. H. E.	Low. 5 (2)	H. A. J.	July 59	5	2½	7	13	21	30	7½	12½	Kent.
444	Wright, A.	Mod. U. (2)	J. B. G.	June 58	5	4½	8	0½	22	30	8½	12½	London.
421	Yale, (1) J. E. I.	Mid. 4 (a)	C. S.	Aug. 57	5	7½	9	5½	22	32½	9½	12½	Melbourne.
443	Yale, (2) J. C.	Low. 4	Dr. F.	Mar. 59	5	0½	7	5½	22	30½	8½	12	London.
162	Yeatman, (1) H. O.	Up. 5	A. B.	Nov. 56	5	6½	9	6½	21½	32	10½	13½	Surrey.
325	Yeatman, (2) C. L.	Up. 4 (a)	A. B.	Nov. 58	4	9½	5	10½	20½	29½	7	10½	Surrey.
462	Yetts, R. M.	Low. Sh.	J. B. G.	Jan. 61	4	11	6	11½	21½	30	8½	12½	London.

ADMITTED MAY 5TH, 1874, WEIGHED ON JUNE 30TH AND JULY 2ND.

320	Atkinson, P.	Low. 4	E. W. M. L.	April 60	5	1½	6	11½	21½	28	8	11½	Yorkshire.
73	Bryant, P. H.	Low. 3	H. R.	July 61	4	4½	4	9½	20½	27½	6½	10	Devon.
126	Buckley, A. D. B.	Up. 3	H. R.	June 60	4	11½	7	2	22	29	8½	12½	Wiltshire.
432	Callaway, J.	Up. 2	C. W. B.	June 62	5	0½	6	3	21½	27½	7½	11½	Kent.
519	Callender, G.	Low. 3	W. E. M.	Oct. 60	4	11	5	12½	21½	26½	7½	11	Manchester.
286	Currey, W. F.	Up. 3	H. R.	May 60	5	3	7	10½	21½	29½	9½	13	Kent.
298	Davis, W. P.	Low. 4	E. W. M. L.	June. 60	5	5	8	5½	22½	31½	8½	12½	Devon.
230	Dawson, R.	Up. 3.	H. R.	June 61	4	10½	6	0½	20½	28	7½	10½	Devon.
229	Dickens, A.	Low. Sh.	H. R.	Feb. 62	4	7½	5	1½	21	25½	6½	10½	Wor'stershire.
410	Duncan, H.	Low. 4	T. A. P.	April 61	5	0½	6	13½	22	28½	9½	11½	London.
501	Fairlie, W. E.	Mod. Mid. 1	W. E. M.	April 60	5	1½	6	10½	21	27½	7½	11½	Ayrshire.
57	Hill, P. G.	Low. 3.	H. R.	Oct. 60	5	2½	6	11½	21½	28½	8	12	Radnorshire.

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		Form.	House.	Born.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	Circumference of head. in.	Circumference of chest. in.	Circumference of arm. in.	Circumference of leg. in.	Place of birth.
351	Hume, G. R. V.	Mod. Up. 2	A. H. B.	July 59	5	5½	8	5½	21½	30	8⅞	12	Glo'stershire.
352	Hume, C. V.	Mod. Up. 2	A. H. B.	July 60	5	3½	8	9½	22½	31½	9	13½	Dublin.
475	Ivatt, G. A.	Mod. Mid. 1	J. B. G.	Nov. 58	5	1	7	6½	22	29½	8½	13	Cambrig'shire
302	Lemann, G. C.	Low. 2	H. R.	June 61	4	6¾	4	8¾	21	25¼	6½	10	S.Petersburgh
235	Longton, C. E.	Up. 3	H. R.	June 60	4	11	6	11¾	21½	29	8¼	12	Lancashire.
364	Master, G. C. C.	Mod. Mid. 2	E. W. M. L.	Dec. 59	5	0½	6	8¼	21½	28½	7¾	11½	Wor'stershire.
237	Melitus, H. E.	Low. 4	E. W. M. L.	Mar. 60	4	7½	5	8¾	20½	26½	7¾	11½	Calcutta.
294	Prichard, C. S.	Up. 2	C. W. B.	Oct. 61	4	11½	6	8¼	22¼	28½	7½	12½	Somersetshire
243	Rashdall, C. S.	Mid. 4 (a)	H. R.	July 60	5	2¾	7	4	21	29	8½	12	Suffolk.
425	Richardson, R. W. E.	Up. 3	F. E. T.	May 60	5	8½	5	5	21½	26	7	10	Bedfordshire.
280	Rogers, E. H.	Low. 3	H. R.	May 61	4	9	5	9½	21	27	7¾	10½	Cornwall.
489	Tanner, E.	Low. 2	C. W. T.	May 63	4	6¾	5	4¾	21½	26	7½	11½	Wiltshire.
444	Thornton, H. L.	Mid. 4 (b)	Home-B.	Oct. 60	4	11	7	5	21½	31½	8¼	13	Dorsetshire.
437	Thorpe, R. W.	Mod. Mid. 1	Home-B.	July 59	5	5½	8	2	21½	30½	8¾	12	Lincolnshire.
127	Tindall, L. W.	Up. 2.	H. R.	Feb. 62	4	10	5	5½	20½	25½	7	10½	Kent.
321	Twigg, F. E.	Low. 2	H. R.	June 63	4	5¾	5	10½	22½	27	8¼	10¾	Dublin.
500	Vickers, D.	Mid. 5 (a).	W. E. M.	July 61	4	8⅞	5	3	22¼	25½	6¾	10¼	Yorkshire.
345	Williams, R.	Up. 3	H. R.	May 60	5	1½	7	5½	22¾	31	9	12¾	Bucks.
379	Woolley, G. H.	Mid. 4 (a)	T. A. P.	Feb. 59	5	2½	8	0	21½	29¾	9	13½	Brighton.

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TABLE No. 1.

Averages at the Different Ages.

Number at each age.	Age last Birth-day.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	chest. inches.	Circumference of head. inches.	Circumference of arm. inches.	Circumference of leg. inches.
3	10	4	6·7	5	5·3	28·17	21·25	7·50	11·30
14	11	4	8·1	5	9·8	27·91	21·36	7·60	11·09
34	12	4	8·5	5	12·6	27·77	21·	7·81	11·34
96	13	4	9·8	6	3·7	28·52	21·33	7·95	11·30
90	14	5	1·8	7	1·8	29·3	21·53	8·26	11·86
141	15	5	3·	8	1·	29·84	21·7	8·72	12·53
102	16	5	6·	9	3·	32·	22·	9·49	13·15
47	17	5	7·	9	6·2	32·2	22·13	9·50	13·28
19	18	5	7·7	10	2·	33·52	22·2	9·60	13·71
4	19	5	7·	10	6·2	33·2	22·4	11·8	14 25

TABLE No. 2.

Measurement of Absentees, Ten in Number.

Number at each age.	Age last Birth-day.	Height. ft.	Height. in.	Weight. st.	Weight. lbs.	chest. inches.	Circumference of head. inches.	Circumference of arm. inches.	Circumference of leg. inches.
1	12	4	9·5	6	4	27·75	21·75	7·25	11·75
1	13	4	10	5	11	26·	21·50	7	11
1	14	4	11.25	6	8·25	28·	20·50	8	12
5	15	5	7	9	7·	32·30	21·75	10·15	13·55
2	16	5	10	9	9·75	31·75	22·37	9·75	13·12

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TABLE No. 3.

MEASUREMENT OF NEW BOYS ADMITTED IN MAY, MEASURED JUNE, 1874.

Number at each age.	*Age last Birth-day.*	*Height.* ft.	in.	*Weight.* st.	lbs.	*chest.* inches.	*Circumference of head.* inches	*arm.* inches.	*leg.* inches.
1	10	4	5·75	5	10·50	27·	22·50	8·25	10·75
2	11	4	8·65	5	10·85	26·75	21·50	7·75	11·25
8	12	4	8·60	5	5·	26·65	21·20	7·	10·62
12	13	5	2·	7	2·57	29·31	21·85	8·42	12·14
6	14	5	1·54	7	0·75	28·50	21·25	8·12	11·71
2	15	5	1·62	7	10·50	29·62	21·75	8·75	13·25

Note.—A more uniform result would be obtained by grouping some of the ages together. The fewness of boys at the ages of 10, 11, 12, 18 and 19, necessarily lead to discrepancies in such a series as the above.

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TWENTIETH HALF-YEARLY

REPORT

OF THE

MARLBOROUGH COLLEGE

Natural History Society,

(FOUNDED APRIL 9TH, 1864,)

FOR THE

HALF-YEAR,

ENDING CHRISTMAS, 1874.

"Tum mihi Naturæ libeat perdiscere mores:
Quis Deus hanc mundi temperet arte domum."

MARLBOROUGH:
PRINTED BY C. PERKINS, TIMES OFFICE,
1875.

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PREFACE.

THERE is but little to mention by way of Preface to the following Report:—The winter term is never a very active one, as regards Natural History pursuits, and this year the visitation of measles possibly prevented many, who might otherwise have done so, from taking any active interest in the welfare of the Society. Still making allowance for this, the Committee feel that the amount of work done by members of the Society has been exceedingly small, and the fate of two of the sections has trembled in the balance from want of attendance. May next term show greater vigour and more real work than has been done of late. Of the Sections, two, as mentioned above, have nearly collapsed. Of the Physical Section, a good report can be given, and it appears to be thriving. The Geological Section, mainly owing to the vigour of its Head, has done some work, though comparatively little out-door work could be accomplished. The first of the General meetings was very successful, and is especially noticeable for the fact of the main part of the exhibitions being furnished by Friends of the School. Our heartiest thanks are due to them, not only for this aid, but also for the kind interest which they have ever shown in the Society, and for their presence at our meetings. The second General Meeting was not a success,

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the attendance of Visitors from the neighbourhood was very encouraging, but as regards the School it was exceedingly poor, not 15 in all being present. Perhaps a single meeting each term is all that can be expected, as a single Field Day a term seems all that can be managed.

The Museum has not been much increased this term, and in fact little will probably be done for another year or so, when we may hope to remove into a special room proposed to be devoted to the purpose. The best thanks of the Society are due to the Council of Marlborough College for thus thinking of them, and when the plans are drawn out and the more general particulars fixed, it will be for the Society to prepare the more minute details, and to make arrangements for the effectual display of its treasures, which at present are but rarely seen.

The Botanical Garden has been sadly neglected, and a new arrangement has been made, which will tell on the Society's funds, but as it has been found impossible to get members to take any interest in it, except on very rare occasions, it is quite clear that all management must be taken out of their hands, and it must henceforth form an item of expense, (though may we hope one of pleasure) in the same way as the museum has done.

The Library has not been much increased. The Rev. J. M. FULLER still continues kindly to send "Science Gossip," D. WALKER, Esq., (O.M.) has sent Facsimile reprints of the "Times," containing the news of the victories at the battles of the Nile, Trafalgar, and Waterloo, and the Common Room supply us with the "Field;" to these our thanks are hereby given: but the other Periodicals have had to be discontinued, as it was found that they were not only unread, but frequently so damaged as to render them unfit for binding.

One more point may be mentioned. The Stanton Prizes, which the Donor wished to be more immediately connected with the Society, have called forth scarcely any competitors. Full particulars about them have been inserted in the present Report, and great care has been taken to render them sufficiently easy for *any* member of the School to try for them, consistently with a fair amount of real work; and it has been so arranged that those who fail one year may have

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a second chance within a reasonable time. There are three prizes offered this year, one for Geology, one for Entomology, and one for Ornithology; all three are subjects which have always managed to command the attention of some at least of the members of the Society. The Committee therefore urge upon members to come forward as Candidates and prevent the whole matter degenerating into a farce; at the same time the prizes will certainly not be awarded unless they are deserved. More than once intending Candidates have come forward about a week before the Examination to know what the subjects are. In reply, it may be stated that the practical work has been so arranged that it will be impossible for such Candidates ever getting a prize.

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LIST OF MEMBERS.

President:

Rev. T. A. Preston.

Secretary:

J. W. Atkinson.

Treasurer:

G. H. Dawson, Esq.

Librarian:

R. W. Doyne.

Committee:

The Ex-officio Members.
C. W. Bourne, Esq.
C. R. Draper.
A. E. Garrod.

Honorary Members:

F. E. Thompson, Esq.
W. E. Mullins, Esq.
Rev. J. Sowerby.
Rev. J. F. Bright.
Rev. G. G. Bradley, D.D.
C. M. Bull, Esq.
Rev. C. W. Tayler.
Rev. A. Babington.
W. Fergus, Esq., M.D.
S. B. Dixon, Esq., F.G.S.
F. Storr, Esq.
W. H. Macdonald, Esq.
J. F. Duthie, Esq.
G. H. Dawson, Esq.
Rev. A. C. Almack.
E. F. im Thurn, Esq.
G. K. Mills, Esq.
W. Mansell, Esq.
Rev. G. W. de Lisle.
W. Koch, Esq.
H. A. Evans, Esq.
Rev. J. W. Mills.
J. Walker, Esq., M.D.
W. W. Fowler, Esq.
J. F. Cornish, Esq.
C. Sankey, Esq.
A. H. Beesly, Esq.
F. E. Hulme, Esq., F.L.S., F.S.A.
Capt. H. O. Bateman.
Rev. C. E. Thorpe.
Rev. J. S. Thomas.
Rev. F. W. Farrar, D.D. F.R.S.
W. P. Sellick, Esq.
H. C. Spry, Esq.
W. D. Smith, Esq.
G. F. Rodwell, Esq.
W. D. Fenning, Esq.
R. E. Price, Esq.
Capt. R. B. Reed.
H. J. Verrall, Esq.
E. Meyrick, Esq.
C. W. Bourne, Esq.
H. D. Drury, Esq.
Rev. C. Soames.
H. P. Dixon, Esq.
W. A. Clarke, Esq.

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LIST OF MEMBERS.

R. W. Doyne.
N. Whiting.
H. W. Thatcher.
W. M. H. Milner.
A. V. White.
W. M. Grove.
A. E. Garrod.
N. Manders.
F. G. Heaven.
D. E. Olivier.
C. E. Fox.
H. S. Philpot.
C. E. Blackett-Ord.
W. S. Robinson.
J. N. Atkinson.
R. Armitage.
A. E. W. Blackburne.
J. B. Kite.
D. H. Davies.
J. Adams.
E. W. Brown.
J. H. C. Dalton.
A. C. Lavers.
E. P. Martin.
A. E. Townsend.
S. B. Pemberton.
W. Giles.
J. P. Grant.
E. Marshall.
A. S. Bright.
C. B. Penlington.
C. R. Draper.
J. D. Rogers.
G. Callender.
A. J. Burness.
C. F. Johnson.
F. S. Hockin.
E. F. Newman.
H. E. Corbett.
C. F. Dixon.
G. R. Hume.
W. G. O. Cooper.
L. F. Paul.
K. W. Murray.
C. V. Hume.
W. G. Hughes.
G. R. Askwith.
C. W. B. Jones.
T. L. Wanklyn.

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RULES.

1.—That this Society be called the Marlborough College Natural History Society.

Constitution.

2.—That the Society consist of Members, Honorary Members, and Associates.

Officers.

3.—That the Officers of the Society consist of a President, Secretary, Treasurer, Librarian, and Curator.

Election of Officers.

4.—That the President have the absolute power of nominating the Secretary.

5.—That those Members of the Committee, who are not ex-officio Members, be elected terminally, and that the retiring Members be eligible for re-election.

6.—That the same rule apply to the Treasurer, Librarian, and Curator.

7.—That each candidate for election give in his name to the President, any time before the day of election.

8.—That all canvassing for votes by a Candidate, or by his friends with his knowledge, shall at once disqualify him for any election that term.

9.—That any Member canvassing for votes for a Candidate, or for a new rule, forfeit the right to vote on any occasion during that term.

10.—That the election of officers of the Society take place near the end of the term, but that they do not come into office till the beginning of the next term.

11.—That on the occurrence of any election, each Member of the Committee have double the number of votes of any other Member of the Society.

12.—That in the event of a vacancy occurring in the Committee or any other office to which Members are elected at the beginning of each term, the vacancy be filled up by the Committee.

13.—That eight Honorary Members have the power of debarring a candidate from standing for any office.

Management.

14.—That the affairs of the Society be conducted by a Committee, consisting of the President, Secretary, Treasurer, and three other Members of the Society, to be elected from and by Members of the Society; three of whom shall from a Quorum.

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President.

15.—That in case of an equality of votes, the President shall have a double or casting vote.

16.—That in the absence of the President, the Committee be empowered to request any Member of the Society to take the chair.

Secretary.

17.—That the duties of the Secretary be to keep a list of all the Members of the Society, and of all former members and Benefactors who may wish to receive the Reports of the Society; to summon meetings, (when necessary) of the Society; to keep a detailed report of the proceedings, as well as lists of Members and Visitors present at each meeting, and generally to act under the direction of the Committee in all matters connected with the welfare of the Society.

18.—That in the absence of the Secretary from any meeting of the Society, minutes of the proceedings be taken by a Member of the Committee, appointed by the President.

Librarian.

19.—That the duties of the Librarian be to keep a catalogue of the Library, with the names of the Donors, and to see that the Library Regulations are carried into effect.

Curator.

20.—That the Curator be responsible for the order of the Museum, and when necessary assist the Secretary in the distribution of the Reports of the Society.

Library.

21.—That any Member of the Society be at liberty to consult any of the books belonging to the Society, but that only certain volumes to be decided on by the Committee, be allowed to be taken from the room.

22.—That if any member wishes to take a volume from the Museum, he shall give his name, and the name of the book, to the Librarian, who shall enter them in the book kept for the purpose.

23.—That every volume so taken out be returned by the end of the term, but that no book be kept more than one month.

24.—That if any volume be damaged, such damage shall be reported by the Librarian to the Committee, who shall decide upon any further proceeding in the matter.

Museum.

25.—That any member of the School, who is not a member of the Society, be allowed access to the Museum at such times as it is open to Members of the Society generally, provided he first obtain leave from the President, which leave shall be renewed every term, but may be taken away at any time, if the privileges be abused in any manner.

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26.—That members of the Society be permitted to use the Museum at such hours as the Committee shall appoint; but that in the afternoon it be used exclusively for the purpose of Natural History.

Botanical Garden.

27.—That the Garden be under complete control of the President, or of some person appointed by the President.

28.—That the Garden be open to Members of the Society at all times, and that each Member be allowed to introduce one visitor.

29.—That any Member on application to the President can have the charge of a bed.

30.—That no plants be put in without special leave from the President.

31.—That Members may keep any plants of their own in such places as the President shall appoint as long as the ground is not required.

32.—That the Society's flowers may not be picked.

33.—That Members may gather from their own plants but may not depute others to do so.

Field Days.

34.—That the Field Days be confined *entirely* to Members of the Society, and that the President appoint a day on which names must be given in.

35.—That any member, who has given in his name, must pay his share of the expenses, unless he is *unavoidably* prevented from going, in which case he must give notice at least three hours before the time of starting.

Members.

36.—That the election of new members rest entirely with the Committee.

37.—That every Member pay a terminal subscription of 2s., to be paid at the first meeting of the Society in that term.

38.—That if a member be elected after the commencement of the term, the amount of his subscription for that term shall be settled by the Committee.

39.—That Members have the right to be present, to state their opinions, and to vote at all general meetings of the Society; to introduce two visitors at all general meetings of the Society; to have personal access to the Museum, and to introduce a visitor at such times, as shall seem fit to the Committee.

40.—That Members be considered as Probationary Members for the first term after their election.

Honorary Members.

41.—That Honorary Members have all the privileges of Members, except the power of introducing a Member of the School to the meetings of the Society.

42.—That Honorary Members pay 5s. a half-year, for which they shall be entitled to a copy of the Report.

43.—That Honorary Members may compound for all future subscriptions by the payment of a sum of two guineas.

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Associates.

44.—That Associates be confined to members of VIth and Upper Vth Forms; that they pay 1s. a term, and be entitled to the use of the Museum, and to attend the meetings of the Society whenever they think fit, but shall not be entitled to vote on any question, to introduce a visitor, or to take books out of the Museum.

Visitors.

45.—That on such occasions when the number of those who wish to be present as visitors at the general meetings of the Society is greater than the number of Members who attend, the President and Committee shall be empowered to admit three or more each, as shall seem fit.

Suspension of Members.

46.—That any member be liable to be excluded from the Society by the Committee, if in their opinion, he shall have failed to show sufficient energy in the working of the Society.

Sections.

47.—That the Society consist of sections to be formed for the more accurate study of the different branches of Natural History, and that every Member must belong to a Section.

48.—That the question of the number of Sections be left open for settlement at the beginning of each term.

49.—That no one may leave one Section for another during the term.

50.—That there shall be a definite number of Meetings of each Section during each Term, the number and days of meeting to be settled at a general meeting of the Society, to be held for that purpose at the beginning of each Term.

51.—That attendance of all members (except those of the VI. Form) be compulsory at all the meetings of any Section to which they belong.

52.—That the Sectional meetings be open to any other members of the Society; or of the School, on application to the Heads of the Sections.

53.—That the internal control of the proceedings at each Sectional meeting be entirely in the hands of the Head of that Section.

54.—That the Heads of Sections be appointed for each Term by the Committee.

Meetings.

55.—That there be two general Meetings of the Society each Term, exclusive of the general preliminary meeting.

New Rules.

56.—That any Member of the Society have power to propose any new rule or any alteration in an old one, provided the motion be seconded by another Member.

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GENERAL MEETING SEPTEMBER 23RD, 1874.

The following arrangements were made :—

Physical Section.—Meetings to be held on October 3, 24, November 13, and December 4.

Geological Section.—Meetings to be held on September 30, October 14, 28, November 11, 25, December 9.

Ornithological Section.—Meetings to be held on October 2, 16, 30, November 13, 27, December 11.

Botanical Section.—Meetings to be held on October 6, 20, November 3, 17, December 1.

General Meetings.—October 23, and November 20th.

Owing to the absence of no less than 20 members, the sections were not completely made up, but the following gave in their names :—

Physical Section.—A. E. Garrod, J. Adams, J. H. C. Dalton, A. C. Lavers, S. B. Pemberton, W. Giles. J. P. Grant, A. S. Bright, C. B. Penlington, J. D. Rogers, A. J. Burness.

Geological Section.—R. Armitage, N. Whiting, C. E. Blackett-Ord, W. S. Robinson, G. Callender, C. F. Dixon, W. G. O. Cooper, W. G. Hughes.

Botanical Section.—J. B. Kite, A. W. Flux, F. G. Heaven, H. S. Philpot, J. Adams, G. R. Askwith.

Ornithological Section.—J. N. Atkinson, E. P. Martin, A. E. Townsend, E. Marshall, C. R. Draper, L. F. Paul, K. W. Murray.

Entomological Section.—W. M. Grove, N. Manders.

E. Hunter and R. A. Farrar resigned, and W. G. Hughes and G. R. Askwith were elected members of the Society.

G. H. Dawson, Esq., resigned the Headship of the Ornithological Section, and J. N. Atkinson accepted it.

GENERAL MEETING OCTOBER 23RD, 1874.

A. E. Garrod read a paper on Comets, illustrated by Diagrams, drawn by F. E. Hulme, Esq., F.L.S., F.S.A. He first touched on their historical significance. They were regarded in early times as types of Divine anger. Any strange historical event was supposed to have its antitype in the physical

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world. So, the appearance of comets was supposed to typify some important crisis of the world's history. Looking at them in another aspect, they throw a great light on chronology. The Chinese always noted and recorded the appearance of a comet. Consequently, we are enabled to tell the date of any event in their history. Then came the main subject of the paper—"The nature and laws of cometary phenomena." First, as to their laws; there are two kinds of comets, one kind revolve in elliptical orbits round the sun—these reappear periodically,—the other kind progress in vagrant parabola and hyperbola; they are once seen, then are carried on for ever to other systems, far beyond the path of Neptune, far beyond the ken of the most powerful telescopes. Between these two classes come that class of comets which we cannot assign with any certainty to either of these genera. The general features of a comet are three-fold; a "nucleus," which is a small bright central spot; the head, an ill-defined disk; the tail, which consists of two streams of light, which blend at a short distance behind the "head." The tail sometimes extends many millions of miles. It is always turned away from the sun. The usual course of those comets which revolve elliptically, is to grow nearer and nearer the sun, then disappear, and suddenly reappear in an entirely changed form; sometimes robbed of their tail, sometimes immensely increased in size (as the 1861 one), sometimes in a different part of the heavens.

He next gave a list of ten celebrated comets; one determined the abdication of the Emperor Charles V., another had six very long tails; it may reappear in 1878, but we fear it is now somewhere very far away from our system. The comet we saw last half is an entire stranger. It had two ears, which grew dim and light alternately; when one was bright the other was dim, and *vice versâ*. The comet which appeared at Cæsar's death was supposed to reappear every 575 years. One of 1770 was identified with it, which never reappeared; it was attracted by the superior force of Jupiter's attraction. When it mingled with his satellites, it made no difference to their route through the heavens; this proved its infinitesimal weight. A comet which first appeared on February 27th, 1826, split into two, which revolve every six years eight months, at some distance from one another. These comets grow alternately bright, just as the ears of the 1874 comet did. A bridge of light connected the two. Enke's comet is one of the most celebrated ones. It revolves in three and a half years; it always appears ·11176 of a day behind its right time; this can only be accounted for by the existence of a rare medium in the interplanetary spaces, sufficient to delay the comet, which is one of the rarest celestial bodies we know, very slightly. So there is a medium through which we revolve, which gradually stops our rate of progress; some day then, a few trillions of years hence, we shall go so slowly, that we shall

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drop into the sun. This comet is also attracted by Mercury, but does not attract that planet, thus proving its unsubstantial composition. One comet revolves round the sun every 100,000 years. The result of Herschel's observations are, that parts of the comet are vapourised by the sun, and the vapour is carried along in the opposite direction by some repulsive force, for many millions of miles; and this current of light is the tail. There are two theories based on these observations; one of them is that these comets are gatherings of numerous meteors. This is supported by the fact that a comet accompanies the "November Meteors." The other is Professor Tyndall's. He has proved by experiment that the action of the violet-rays of the sun upon a very little vapour results in the precipitation of a very long train of light. It may be, that the etherial violet waves as they pass through the fluid scatter it into many small particles, which stretch across the sky like one long stream of light. But the exact mode in which this law works is not known. The fact remains that out of a very few ounces of iodide-of-allyl vapour, a luminous cloud as large and bright as Donati's comet of 1858 might be manufactured.

The meeting was chiefly memorable from the fact that friends, not connected with the College, had kindly exerted themselves to give an exhibition of Fungi, for the benefit of the members of the school. For various reasons it was feared that but a very poor collection of fungi could be exhibited, but the warmest thanks of the society are due to Mr. Bleeck, Mrs. Gwillim, and Mrs. Featherstone, for the great trouble they took in collecting the fungi, and to Miss Preston and Mr. Featherstone for helping in arranging them. Fungi are very perishable things and require to be exhibited as soon after collection as possible. The whole of Thursday afternoon was spent in wandering through the Forest and country round Marlborough in collecting specimens, and such was the richness of the locality, as well as the diligence of the searchers, that the whole time from ten a.m. till seven p.m., on Friday, was barely sufficient to arrange the collection. But, when arranged, it formed a really interesting and beautiful object. Four tables were covered with groups of fungi, either showing their different stages of growth, or the variety of allied species. The first table was covered with a collection of *Edible* fungi—generally known by their pale colours. At this table, the place of honour was held by a huge "Giant Puff-ball," which weighed, when fresh, rather over 7 lbs., and is said to be superior, as an esculent, to any French omelette ever made. From observations made upon a specimen of this species, of almost the same weight, it was calculated that the cells of which it was composed must have been produced at least at the rate of 12,000 a second, and the number of spores at no less than 1,200,000 a second. On the stand supporting this monster, were arranged a series of *Clavarias*, looking like fine branched specimens of white

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and yellow corals, whilst disposed in clusters over the rest of the table were about twenty other kinds of edible fungi, ranging from the well-known *Mushroom*, and its ally the *Horse Mushroom*, to the rather scarce *Beef-steak Fungus (Fistulina hepatica)*, of which it is declared that "if it is not beef, it is sauce for it." In this long series were the *Chantarelle*, the *Blewitts* with their delicate blue stems, the *Boletus*, the *Helvellas*, with their curious hollowed stems and twisted tops, the *Orange-milk* (*Lactarius deliciosus*), the *Kidney Hydnum*, the *Champignon*, and various others, all frequently met with in country walks, and all equally neglected from ignorance of their good qualities.

Turning next to the second table, remarkable for the brilliant colours of the species (which may be roughly considered a test of unwholesomeness) was presented a series of Poisonous Fungi. One of the most beautiful was the *Fly Agaric*, with its brilliant crimson cap studded over with the white fragments of the "wrapper." The *Boletus*, recognised from its wholesome congener, by its turning blue when broken: the *Clammy armillaria*, growing in clusters on the beech trees in the Forest, the *Russulas* with their scarlet tops, and numerous others of all hues and colours. Two more tables were occupied with a *General* Collection, and here the variety of form was especially remarkable. The lovely *Peziza*s like scarlet or yellow caps, the *Craterellus* like black Petunias, the beautiful, though common, *Stereum* with its zones of olive green, and finally the curious but horribly smelling *Stinkhorn*. Few people, on seeing this collection, were aware of the vast variety or beauty of this class of plants, and though several of the species were un-named, over 50 were so, and if the exhibition only induced people to use their eyes when out walking, one great object of the Exhibitors will have been accomplished.

Besides the fungi was a set of plants in flower, over 190 in number, collected by the Rev. J. Sowerby. At this season of the year so large a number was remarkable.

The Physical Section supplied the remainder of the entertainment. A series of microscopic objects was exhibited under microscopes borrowed from all owners of such instruments.

About 50 members of the School were present, and 40 members of the Common Room and visitors from the Town.

LIST OF FUNGI EXHIBITED (AS FAR AS THEIR NAMES COULD BE DETERMINED).

Agaricus (Amanita)... ... Phalloides
muscarius
rubescens

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asper
(Lepiota) ... ... procerus
(Armillaria) ... melleus
mucidus
(Tricholoma) ... rutilans
albus
personatus
nudus
(Clitocybe) ... ... nebularis
geotrupus
(Collybia) ... ... fusipes
(Clitopilus) ... ... prunulus
(Psalliota) ... ... campestris
arvensis
silvaticus
æruginosus
(Hypholoma) ... sublateritius
fasciculare
Coprinus ... ... comatus
Cortinarius ... ... caperatus
(Inoloma) ... ... violaceus
Paxillus ... ... involutus
Hygrophorus ... conicus
Lactarius ... ... torminosus
insulsus
pyrogalus
piperatus
deliciosus
serifluus
rufus
Russula ... ... nigricans
heterophylla
emetica
fœtens
alutacea
Cantharellus ... cibarius
Marasmius ... ... oreades
Boletus ... ... chrysenteron
calopus
luridus
scaber

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Fistulina	hepatica
Hydnum	repandum
Craterellus	cornucopioides
Clavaria	coralloides
	rugosa
	vermiculata
Phallus	impudicus
Bovista	plumbea
Lycoperdon	giganteum
Helvella	crispa
	lacunosa
Peziza	aurantia

The following is a list of the plants exhibited. Owing to too short a notice the number might have been greater; those which might have been exhibited are also included in the list, but marked with an asterisk (*)

Ranunculus
acris
repens
Caltha
palustris
Papaver
rhœas
Chelidonium
majus
Fumaria
officinalis
Nasturtium
officinale
sylvestre
Arabis
* hirsuta
Sisymbrium
officinale
thalianum
Sinapis
arvensis
alba
Diplotaxis
muralis
Thlaspi
arvense
Lepidium
campestre
Capsella
bursa-pastoris
Senebiera
* coronopus
Raphanus
Raphanistrum
Reseda
lutea
Helianthemum
vulgare
Viola
Reichenbachiana
Riviniana
tricolor
(var) arvensis
Polygala
vulgaris
Silene
inflata
noctiflora
Lychnis
vespertina
diurna
Githago

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Arenaria
trinervis
* serpyllifolia
Stellaria
media
* Holostea
graminea
Cerastium
glomeratum
triviale
aquaticum
Malva
moschata
sylvestris
rotundifolia
Hypericum
perforatum
Geranium
pratense
dissectum
molle
Robertianum
Linum
Catharticum
Ulex
Europeus
nanus
Medicago
lupulina
Trifolium
pratense
incarnatum
arvense
repens
hybridum
procumbens
Vicia
hirsuta
sepium
Onobrychis
sativa
Spiræa
ulmaria
Poterium
Sanguisorba
Agrimonia
eupatoria
Alchemilla
vulgaris
Potentilla
Tormentilla
fragariastrum
Fragaria
vesca
Rubus
discolor
cæsius
corylifolius
Geum
urbanum
Epilobium
* parviflorum
Spergula
arvensis
Soleranthus
* annuus
Helosciadium
nodiflorum
Pimpinella
saxifraga
Æthusa
cynapium
Angelica
sylvestris
Pastinaca
sativa
Heracleum
sphondylium
Daucus
carota
Torilis
Anthriscus

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Scandix
pecten
Chærophyllum
temulum
Hedera
Helix
Lonicera
Periclymenum
Sherardia
arvensis
Galium
Aparine
Mollugo
verum
Valerianella
* dentata
Dipsacus
sylvestris
Knautia
arvensis
Scabiosa
succisa
columbaria
Bellis
perennis
Bidens
tripartita
Achillea
Millefolium
Anthemis
Cotula
Matricaria
inodora
Chrysanthemum
segetum
Tanacetum
vulgare
Gnaphalium
uliginosum
sylvaticum
Senecio
vulgaris
Jacobæa
aquaticus
Arctium
intermedium
Centaurea
nigra
cyanus
scabiosa
Carduus
nutans
crispus
lanceolatus
eriophorus
arvensis
palustris
acaulis
Lapsana
communis
Hypochœris
radicata
Apargia
hispida
autumnalis
Picris
hieracioides
Leontodon
taraxacum
Sonchus
oleraceus
asper
Crepis
virens
Hieracium
pilosella
vulgatum
Campanula
glomerata
Trachelium
rotundifolia
patula

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Calluna
vulgaris
Ethyræa
Centaurium
Gentiana
amarella
Borago
* officinalis
Lycopsis
arvensis
Symphytum
asperrimum
Echium
vulgare
Lithospermum
* arvense
Myosotis
palustris
arvensis
Verbascum
Thapsus
* nigrum
Linaria
elatine
spuria
vulgaris
Schrophularia
nodosa
aquatica
Euphrasia
officinalis
odontites
Veronica
Anagallis
serpyllifolia
arvensis
agrestis
polita
Buxbaumii
Mentha
pulegium
Origanum
vulgare
Thymus
serpyllum
Calamintha
officinalis
acinos
clinopodium
Prunella
vulgaris
Nepeta
* Cataria
Lamium
amplexicaule
purpureum
album
Galeopsis
Ladanum
Tetrahit
Stachys
Betonica
sylvatica
Ballota
fœtida
Primula
vulgaris
Anagallis
arvensis
Plantago
lanceolata
Chenopodium
* album
Rumex
obtusifolius
crispus
* sanguineus
Polygonum
lapathifolium
Persicaria
aviculare
convolvulus

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Euphorbia
Helioscopia
* amygdaloides
Peplus
exigua
Mercurialis
perennis
Urtica
urens
Juncus
bufonius
Phleum
pratense
Alopecurus
* agrestis
Holcus
lanatus
Aira
cæspitosa
Trisetum
flavescens
Arrhenatherum
avenaceum
Poa
annua
Glyceria
plicata
Dactylis
glomerata
Festuca
gigantea
Brachypodium
sylvaticum
Bromus
sterilis
Serrafalcus
mollis
Triticum
caninum
Lolium
perenne

Total 209

GENERAL MEETING NOVEMBER 20TH, 1874.

The President gave a Lecture on the "Fertilization of Plants," being merely a short account of recent discoveries in this subject.

Exhibitions.—A beautiful specimen of Odontoglossum (a species of orchis) in flower by F. E. Thompson, Esq.

A collection of various Thermometers by A. E. Garrod.

A series of minerals illustrating the Varieties of Lime, and of Iron, from the Society's collection.

A small selection of Birds, also from the Society's collection.

The attendance was very small, not more than 30, the majority of them Visitors from the town, being present.

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ORNITHOLOGICAL SECTION.

THIS section has not perhaps been in quite such a flourishing condition this term as during the two last terms. No doubt this is partly owing to the season of the year. During the autumn and winter months very little Ornithological work can be done; there are no nests to be taken, and very few observations can be made. Still more work ought to have been done. Notices of our winter Visitors, wild Ducks, wild Geese, etc., might have been made; yet not a single notice of any kind has been sent in.

The Sectional Meetings have also shown a want of interest in the proceedings of the section, which it is to be hoped will be rectified next term. Here again, however, there is some excuse to be found in the prevalence of measles. This public calamity robbed us of two or three of our members during a greater part of the term.

The first meeting was on Friday, October 2nd. Owing to some mistake only two members appeared, who, after waiting some time for the defaulters, adjourned.

The next meeting was held on Friday, October 16th. The attendance was better this time, but the numbers were still small. The evening was occupied with a discussion of various peculiarities in the anatomy of birds, etc., etc.

The next meeting was on November 18th. G. H. Dawson, Esq., read a most interesting paper on the "Migration and Powers of Flight of Birds," illustrated by many common instances. The lecturer also touched on the "home instincts" of birds, *i.e.*, their love of one particular spot for nesting and haunting in successive years.

The next meeting was on Friday, November 27th. C. R. Draper read a paper "On the Anatomy of Birds," detailing various differences between the formation of a bird and a man.

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BOTANICAL SECTION.

One meeting was not held from unavoidable circumstances, and the last one was not attended by any of the members of the Section. Though the season has been a remarkably good one for Botanical purposes, there never was exhibited a greater lack of interest in the subject; consequently the Section, for the present, has ceased to exist. Mainly through the exertions of the Rev. J. SOWERBY several new plants have been added to our list, and the large number still in flower at the end of October, shows that a very good amount of work might have been done by members of the Section, had they felt disposed to do so.

One of the "Stanton Prizes," which was to have been given for Botany, was handed over to the Physical Section, in consequence of no Candidates having come forward. This is the more to be regretted as the subject was a very easy one and *ought* to have commanded a fair number of competitors.

The species new to our list, discovered this term, are

Sisymbrium Irio.—Near Pewsey.

Lepigonum rubrum.—Savernake Forest.

Silene noctiflora.—Near Pewsey.

Tragopogon pratensis, (var. minor).—Near Pewsey.

Thrincia hirta.—Commonly distributed.

Poa compressa.—Mildenhall.

Diplotaxis muralis.—A small specimen (probably of this species) was brought in by the Rev. J. Sowerby, but the plant could not afterwards be found for verification. It occurred on the Railway Bank.

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GEOLOGICAL SECTION, OCT., 1874.

14 *Members.*—C. W. Bourne, Esq. (Head of Section); H. D. Drury, Esq., R. Armitage, M. N. Whiting, A. V. White, C. E. Blackett-Ord, W. S. Robinson; G. Callendar, H. E. Corbett, W. G. O. Cooper, C. F. Dixon, F. L. Wanklyn, A. E. W. Blackburn, C. W. B. Jones.

The attendance at the meetings was rather irregular owing to interruption by measles, and for the same reason it was found impossible to hold all the proposed meetings. Perhaps the most important paper was one by Mr. Horner on Glacial Action, which was illustrated by the exhibition of numerous drawings and plates, and proved of great interest. Mr. Drury also read a paper on certain fallacies and assumptions in the usual text-books on Geology, which gave rise to a lively discussion. At the last meeting for the Term the President gave an interesting lecture on the Greywethers or Sarsen stones.

With regard to the field work of the Section, very little I fear can be said to have been done; with the exception of the first meeting, when presents of fossils by Garrod and Burness were passed round; there were hardly any exhibitions at any of the meetings, and little energy or interest was shewn in the subject. It would be well to remind members of the Society, that the whole institution is likely to become a mere farce if members consider—as they seem to do at present—that they can dispense with any exertion on their own part. At present the majority seem to look upon the meetings as a tolerably pleasant mode of passing an hour or so without the exertion of reading or thinking, or in fact doing anything except passively existing. It is hardly exaggerating to say that probably four-fifths of the members have never done a single half-hour's independent work, and that consequently they have hardly derived a single atom of benefit from the Society. Such a state of affairs is discreditable to the energy of the School, disheartening to the heads of sections, and fatal to the vigorous existance of what ought to be a most valuable and attractive institution. May the next Report speak of a very different state of things; a Society which is merely bolstered up by the energy and good nature of one or two willing workers is an anomaly which should not exist.

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PHYSICAL SECTION.

MEETING OCT. 3.—A. E. Garrod read a paper upon "Colour," illustrated by experiments.

There were 32 persons present.

MEETING OCT. 30.—G. F. Rodwell, Esq., read a paper on "some new experiments connected with Heat."

There were 30 persons present.

ON AN INSTRUMENT FOR MULTIPLYING SMALL MOTIONS (SUCH AS THE EXPANSION OF A BODY BY HEAT.)

THERE is a small clock-work arrangement made in Paris for paying out magnesium ribbon at a nearly uniform rate, in connection with one form of magnesium lamp. It consists of a train of five wheels, which by means of a spring set in motion two small rollers between which the magnesium wire passes. The last wheel moves an endless screw, and gives very rapid motion to a vertical steel axis carrying a fly to regulate the varying motion conferred by the unwinding spring. It seemed probable that if a short vertical lever were added to the spring wheel and an index or mirror attached to the vertical shaft of the endless screw, an enormous augmentation of a small motion communicated to the lever could be obtained, and the instrument would be very suitable for showing minute changes produced by heat, and the lengthening of an iron bar during magnetisation. The suitability of the machine for such a purpose will be more obvious if we consider the arrangement of the train of wheels mentioned above. Suppose that the first wheel A has 40 teeth, working in a small wheel B of 4 teeth; on the axis of B let there be a third wheel C of 40 teeth working in a fourth wheel D of 4 teeth: then for one revolution of A, B will revolve ten times, and D a hundred times. On the axis of D let there be a fifth wheel E of 20 teeth, a movement of which through the space dividing two contiguous teeth will turn the vertical screw E once round. Now for one revolution of A, the vertical axis of F will clearly move through 2000 revolutions, but we only require *one* revolution, for one revolution of the endless screw will move an index attached to its axis through 360° of arc. Hence a movement of A through $\frac{1}{2000}$ of a revolution will move the index of F through 360°, and a movement of A through $\frac{1}{720000}$ of a revolution will move the index through one degree of arc.

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The instrument is completed by placing the multiplying wheel arrangement at one end of a three-foot board, furnished with a central groove in which an upright capable of being firmly fixed in any position can slide. This upright is furnished with a micrometer screw resting on a bar of iron 2½ feet long, the other end of which bears upon the vertical lever attached to the axis of the primary wheel A. The only real difficulty to be contended against is the want of steadiness: the index-needle sometimes overruns, and cannot be made to return perfectly to zero if it has passed through more than 40 or 50 degrees. In order to remedy this a small hair spring was attached to the vertical shaft carrying the index, and it promptly brought back the needle to zero, but it added an enormous resistance because it acted upon the last of a series of levers commencing with the wheel A, and a good deal of the expanding force of the bar of iron was expended in overcoming the internal strain of the apparatus. Two other methods suggest themselves for bringing the needle back to zero, so long as it does not pass through more than 90°:—The first to slightly elevate the outer edge of the stand of the instrument (say ¼ of an inch) when the needle will return to zero by its own gravity; the other to have a small magnet in the neighbourhood of the zero point to draw back the needle of thin light steel.

This needle is 6 inches long, hence it travels over 37·7 inches in completing one revolution, and over ·104 inch for 1 degree of arc. The micrometer screw has 23 threads to the inch. A rotation of the micrometer head through 30° sends the index needle round the scale, that is through 37·7 inches:—Now 360 ÷ 30 = 12, and $\frac{1}{12}$ of $\frac{1}{23}$ inch. = $\frac{1}{276}$ inch. Hence a movement of $\frac{1}{276}$ in the iron bar produces a movement of 37·7 inches in the needle; that is as 1 : 10405, or as 1 inch to 289 yards. If a small mirror be attached to the vertical axis of the endless screw, and if the spot of light be reflected to a distance of only 6 feet, the motion will be as 1 : 249724 or as 1 inch to nearly 4 miles.

As to the performances of the instrument: a few drops of alcohol placed in a spoon are ignited and the flame held under the iron bar; in less than two minutes the index moves through 90° = more than 9 inches; and a spot of light at 6 feet from the mirror through 216 inches or 18 feet. The warmth of the hands causes the index to move through 30° or 3 inches, or the spot of light through 6 feet. A bar of iron, ·5 inch diameter by 2·5 feet long, surrounded by double coils of wire, and excited by a battery of six Bunsen cells causes the needle to move through 5 degrees or ·5 inch. The last result is altogether unsatisfactory, but is probably vitiated by the fact, that iron enters into the construction of the multiplying wheel arrangement, which is of course acted upon as soon as the iron bar becomes a magnet. To fairly test the instrument for this experiment, it should be entirely constructed of copper and brass, and extreme rigidity and steadiness should be secured in

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all parts of the working arrangement. The coil should be of very fine copper wire coiled upon a thin glass tube, and there should be at least three separate layers of wire: it should be excited by a battery of twelve or sixteen quart Bunsen cells, and the whole arrangement should be fixed to a perfectly steady support. A curious experiment may be made in reference to the iodide of silver: if a bar of the latter is caused to bear upon the lever of the wheel A, and if the index is forced up to 90° by the pressure of the micrometer screw, then on heating the iodide the needle returns to zero indicating contraction (see next paper), while as the iodide cools the expansion forces the needle up to 90° again.

ON A BODY WHICH CONTRACTS WHEN HEATED.*

So far as we know heat expands all bodies with one single exception. It is true that water, bismuth, and a few other substances for a few degrees above their point of solidification, are contracted when heated, but we must remember that in their instance a change of molecular state is about to be effected, and we have many examples to prove that bodies are considerably modified when near their points of liquefaction or solidification: for example in the case of a condensable gas. Boyle's law ceases to hold good when the point of liquefaction is nearly attained. The one exception alluded to above is the Iodide of silver—a substance which possesses remarkable properties, both in relation to heat and light. This substance according to M. Fizeau (whose name we shall remember in connection with the recent determinations of the velocity of light "paraît offrir l'exemple d'une inversion complète des phénomènes ordinaires de la dilatation par la chaleur, car son volume diminue très-certainment pendant l'echaffement et augmente pendant le refroidissement."

There are several methods of procuring the iodide: three were adopted, the two principal, the dissolution of pure silver in Hydriodic Acid.

$$Ag + HI = AgI + H \text{ (evolved)}$$

The other, the addition of Iodide of Potassium to a solution of Nitrate of silver.

$$AgNO_3 + KI = AgI + KNO_3$$

The precipitate is a pale canary-yellow powder, very flocculent and not easily effected by light, except when in contact with silver, or a silver salt.

* This and the following note are very brief abstracts of two papers given *in extenso* in the last "Proceedings of the Royal Society," some of the facts of which papers were mentioned to the Section in the course of a general account of "some new experiments in Heat."

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It fuses at about 450°C. (842°F.), and cools to a greenish grey mass. If such a mass be heated it begins to darken at a temperature a little above that of boiling water until above 200°C it exhibits a decided red colour, it fuses to a dark red liquid possessing the colour of carmine or of strongly heated sulphur. The liquid solidifies to a dark red transparent body, which continues to cool and to contract until it reaches a temperature of about 116°C. when it suddenly expands, loses its transparency, and becomes an opaque crystalline grey solid. The co-efficient of expansion of this mass was determined by heating a known weight and volume in a known weight and volume of mercury in a specific gravity flask, and noticing the amounts of mercury expelled during known ranges of temperature. Thus it was found that the following amounts of mercury (in grammes) were driven from the flask for a difference of 1°C. For the following ranges :—

Between—18	and	0°C.	= ·052648.
„ 0	„	21°C.	= ·050285.
„ + 21	„	67°C.	= ·048228.

From these results and others of a similar nature a curve table was constructed in which the effects of heat upon Iodide of silver were compared with the effects exhibited by Mercury when heated through a great portion of the same temperature-range. The general conclusions were as follows :—

1.—That the Iodide of silver exists in three allotropic forms : (compare crystalline and amorphous sulphur, phosphorus, and carbon, and the manner of producing them by heat ;) viz : (*A*) at temperatures between 116°C. and its fusing point, as a plastic, tenacious, amorphous substance possessing a reddish colour, and transparent to light ; (*B*) at temperatures below 116°C. as a brittle, opaque, greenish grey, crystalline mass ; and (*C*) if fused and poured into cold water, as an amorphous, very brittle, yellow, opaque substance.

2.—That the Iodide possesses a point of maximum density at or about 116°C., at the moment before passing from the amorphous into the crystalline condition. (Compare the maximum density of water and the conditions under which it exists).

3.—That if we allow a mass of molten Iodide to cool, the following effects may be observed ; (*A*) at the moment of solidification a very considerable contraction takes place ; (*B*) the solid on further cooling undergoes slight and regular contraction after the manner of solid bodies in general, until (*C*) at or about 116°C. it undergoes sudden and violent expansion passing from the amorphous into the crystalline condition ; (*D*) after undergoing this expansion the mass on further cooling undergoes expansion ; and (*E*) the co-efficient of contraction diminishes as the temperature

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decreases, or otherwise expressed the co-efficient of contraction augments with the temperature. (Compare this with the action of heat on zinc, and on bismuth).

ON THE EXPANSION OF A PARAFFINE OF HIGH BOILING-POINT.

On heating some paraffine in a somewhat narrow tube to a point approaching its boiling-point, I was very much struck by the enormous expansion which it appeared to undergo. Further trials, in which of course it was necessary to weigh the paraffine before and after heating, proved that a volume of paraffine which is taken as 100 at 0°C, actually increases to a volume of 150·9853 at the boiling-point. Otherwise expressed, two volumes at 0°C become three volumes at 395°C, and as the volume increases the density diminishes; hence the specific gravity or density at the boiling-point is only two-thirds of the density at 0°C. I believe there is no other substance which undergoes such considerable expansion. The mean co-efficient of expansion appears to be ·000593, for the liquid for 1°F.

The following table represents the volumes of a mass of paraffine (taken as 100 at 32°F) at various temperatures, and the corresponding specific gravities. Specific gravity at 32°F, 0°C. = ·921.

100 vols. at 32°F. (0°C.)	become	100·8955 at 60°F. (15·55°C.)	sp. gr. ·913
„ „	„	102·4591 at 100°F. (37·6°C.)	sp. gr. ·899
„ „	„	105·3215 at 120°F. (48·85°C.)	sp. gr. ·894
„ „	„	110·6974 at 142°F. (61·11°C.)	sp. gr. ·874 solid.
„ „	„	113·8447 at 142°F. (61·11°C.)	sp. gr. ·799 liquid.
„ „	„	117·8135 at 200°F. (93·3°C.)	sp. gr. ·766
„ „	„	123 9717 at 300°F. (148·8°C.)	sp. gr. ·739
„ „	„	130·1297 at 400°F. (205 5°C.)	sp. gr. ·706
„ „	„	136·2879 at 500°F. (260°C.)	sp. gr. ·675
„ „	„	142·4461 at 600°F. (315·5°C.)	sp. gr. ·647
„ „	„	150·9853 at 744°F ? (395 5°C)	sp. gr. ·610

If the expansion of this paraffine be shown in a curve table, side by side with that of such expansible bodies as Mercury, and Terbromide of Phosphorous, the considerable expansion of the iodide becomes more apparent.

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MEETING NOV. 27.—C. W. Bourne, Esq., read a paper on Thermometers, illustrated by diagrams and instruments.

There were 38 persons present.

For various reasons, only three meetings were held, instead of our usual number of four. The meetings were well attended. Papers were read at all the meetings.

At the first general meeting we exhibited a series of microscopes, under which were slides chiefly relating to Physical subjects. The microscopes were kindly lent by Dr. Farrar, Rev. T. A. Preston, G. F. Rodwell, Esq., and several members of the school.

At the general meeting on Nov. 20th, our stall was devoted to Thermometers of various kinds, among which were a thermopile and galvanometer, a differential thermometer, and a series of Fahrenheit thermometers, lent by G. F. Rodwell, Esq.; a solar radiation instrument, lent by Rev. T. A. Preston; and a series of centigrade instruments by A. E. Garrod.

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STANTON PRIZES.

I.—The Subjects for the Stanton Prizes will be divided into two groups:

(i) Botany and Physics.

(ii) Entomology, Geology, and Ornithology.

II.—Candidates will have to pass a Preliminary Examination in the elements of their own subject, and of one other of the subjects set for that year; after which, *if passed satisfactorily*, they will be examined in their own special subjects.

III.—In addition to these two Examinations, a certain amount of practical work will have to be sent in.

IV.—The books required for the Preliminary Examination will be—

Botany—Oliver's Botany (chapters 1, 2, 3, 8).

Physics—Balfour Stewart's Physics (1s. edition).

Entomology—Dallas' Elements of Entomology (chapters 1, 2, and 3).

Geology—Bonney's Manual of Geology (1s., published by S.P.C.K.), chapters 1 to 6.

Ornithology—Stanley's History of Birds (chapters 2 and 3).

V.—The special subjects and practical work shall be changed every year, and shall be given out as soon as possible after the announcement of the prizes gained for the previous year.

SUBJECTS FOR 1875.

The Prizes this year will be given for Entomology, Geology, and Ornithology.

(1) *Preliminary* Examination, see rule iv.

(2) *Special* Examination.

(a) Entomology—Dallas' Elements, chapters iv., xii.

(b) Geology—Remainder of Bonney's Manual and Jukes' School Manual of Geology.

(c) Ornithology—Remainder of Stanley's History of Birds.

(3) Practical Work.

(a) Entomology (i)—A Collection of British Butterflies; and (ii) Drawings of the *veins* of the wings of the different species.

(b) Geology (i)—A series of Marlborough Chalk Fossils, of all species.

(ii) A Map of the Country four miles round Marlborough.

(c) Ornithology—A Calendar of Observations kept from March 1st to June 30th.

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REMARKS.

As regards the Collection of Butterflies, the following conditions must be observed as far as possible.

(i.)—A male, female, and underside of each species must be sent in, if possible.

(ii.)—Any *remarkable* varieties may also be sent in.

(iii.)—*Bred* specimens will be considered of more importance than *captured* ones.

(iv.)—Every specimen must be numbered, corresponding with a number in a note book (which must accompany the collection), in which are given the dates, and locality of capture, and any other remarks worth recording.

(v.)—In the case of *bred* specimens, notes of transformations, &c., may be entered; the more complete, the better.

(vi.)—One half, at least, of the number of specimens sent in must have been captured near Marlborough.

(vii.)—Each candidate must be prepared to certify that every specimen in his collection are either captured or bred by himself.

As regards the collection of Chalk Fossils and Map.

(i.)—In all cases the *localities* where the fossils were obtained, must be given.

(ii.)—Names as far as possible should also be added.

(iii.)—As many particulars as possible (especially *localities*) may be written on the specimens, in such places where they would suffer no injury by so doing, but it will also be advisable to number each specimen, by writing on it (not gumming a label), and in an accompanying note book giving all further details.

(iv.)—Besides a typical specimen of each species, other specimens may be added, illustrative of structure or other points of interest, but in all such cases, the special points of interest must be mentioned in the accompanying note book.

(v.)—The map should be coloured geologically, patches of gravel or clay carefully marked, also all chalk-pits and cuttings, which may be numbered, so as to serve as a reference map to the note book.

(vi.)—The fullest remarks may be made in the note book, and any remark which results from the actual *observation* of the candidate, will be considered of great importance.

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As regards the Ornithological Calendar, candidates are recommended to read a short article on the subject, by Professor Newton, a copy of which is in the Society's Library, but perhaps it may be as well to mention that all remarks about the migration, singing, pairing, nesting, frequency of even the commonest species, are all fit subjects for the Register, besides any unusual or remarkable facts which may be observed by the candidate.

ACCOUNTS FOR THE YEAR 1874.

RECEIPTS.

	£	s.	d.
LENT TERM.			
Subs., Hon. Members ...	5	12	0
,, Members	4	1	0
,, Associates	0	2	6
Composition	2	2	0
Sale of Reports	82	5	0
Sale of "Antiquities" ...	0	14	0
Donations	18	14	7
EASTER TERM.			
Subs, Hon. Members ...	0	5	0
,, Members	5	4	0
,, Associates	0	1	0
Donations	25	2	0
Towards Field Days ..	2	4	6
MICHAELMAS TERM.			
Subs., Hon. Members ...	0	17	6
,, Members	4	12	0
Compositions	4	4	0
Sale of Reports	1	5	0
Sale of "Antiquities" ...	2	9	0
Donation	0	2	0
Towards Field Days ...	11	14	0
	£171	11	1

EXPENDITURE.

	£	s.	d.
Deficit from last Account	3	18	5
Subs. to Wilts Arch. Society	0	10	6
Expenses of Lectures, Lent Term	2	6	6
Expenses of Lectures, Michaelmas Term... ...	0	10	0
Expenses of Conversazione	33	5	6
Printing Report, Midsummer, 1873	46	5	1
Printing Report, Xmas, '73	48	13	3
Expenses, Field Days ...	13	2	6
Museum Expenses	15	8	2
Book Account	1	10	9
Stationery and Postage ...	0	10	6
Balance in hand	5	9	11
	£171	11	1

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MIGRATION OF BIRDS.

The following paper was read by G. H. Dawson, Esq., at a meeting of the Ornithological Section, November 13th, 1874 :—

Those of us who live in the country and do not wilfully shut our eyes and ears to country sights and sounds, are reminded at all seasons of the year of the presence of birds of some kind or other, which we regard as visitors and not as constant friends. The first coming of the swallows, though the proverb says truly that "one swallow does not make a spring," has a peculiar charm, and we watch them with pleasure as they settle, apparently wearied with their long journey on the top of some high tree,—no ordinary resting place for them as the season becomes more advanced, and again, in turn, we view with something of melancholy the last gathering on the house tops, or (in these days of steam and electricity) on the telegraph wires, which is one of our surest indications of the return of winter. The arrival of the swallow tribes and other summer visitors, as the cuckoo, and the more delicate and retiring warblers, is an occurrence of every year, and so familiar to us, that perhaps we never pause to ask ourselves, what the cause or causes of these periodical migrations may be. Yet this is a question not to be answered in a word, and if we test the theories commonly held, we are likely to find many instances which they will not account for, and may need to fall back as a last resource upon a strange instinct, which we cannot analyse or explain, which prompts our feathered friends to change their quarters at certain fixed seasons of the year.

I propose therefore (hoping that my meaning may be quite intelligible to you) to divide this subject, "The Migration of Birds," under several heads, and treat them in order. First then, we will consider the causes commonly assigned for Migration. Secondly, as connected with this, we will say something of the power and rapidity of flight: and thirdly, if it is not inconsistent to do so, notice any instances which may occur of *home* instincts as compared and contrasted with those of migration.

In the first place then, suppose we assume that birds are driven to change their quarters by

(1). Want of proper food.

(2). Stress of weather.

(3). Want of a suitable nesting ground.

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And try how far these explanations will suffice for our purpose: taking into consideration both our summer and winter visitors, as the swallow tribe, the cuckoo, the warblers; and on the other side the woodcocks and snipes, redwings, fieldfares, &c.

I take *the want of proper food* first in order, because this seems to me to be a much more comprehensive cause than any which can be derived from inclemency of the weather: indeed I question whether birds suffer severely from extreme cold. The wren for instance, small and delicate as its structure is, shows no signs of inconvenience in the coldest winter weather, probably because its food consists of insects which shelter themselves in out-houses and under the bark of trees, so that the larder is never deficient when other birds are suffering from hunger and dying, as we often suppose, from the effects of cold. Meanwhile the early frosts cut off the supplies on which the flycatchers and the warblers, which feed entirely on insects in the open country, depend, and the want of food alone must drive them, together with the swallows, swifts, and martins, from us. Hence it is probably unnecessary to assume that they are too delicate to meet the cold of an English winter, in the face of indications of great endurance of cold in many birds. Thus we have settled on one cause which may perhaps be sufficient to account for the autumnal departure of our summer visitors, but I would have you now consider the case of the woodcocks, fieldfares, &c., which visit us only in the winter months, being driven to us probably by want of food in the more northern climes. Here the question is why they should leave us with the approach of spring, and I confess that the cause is by no means apparent; for there can be no lack of suitable food for these birds in the summer months, or even in these days of high cultivation there is abundance of waste land which would seem to be admirably adapted for nesting ground: moreover a few woodcocks and a considerable number of snipes *do* nest with us, though the great majority are migratory. The fieldfares too and redwings seem to share closely in the habits of the blackbirds and thrushes, and might, one would suppose, find comfortable quarters with us for the summer months, yet they leave us, one and all, under the influence apparently of some strange instinct, which we cannot adequately explain, but which causes even the caged nightingale or blackcap, which lives under wholly artificial circumstances, to show an unwonted restlessness and excitement at the precise season of the year when migration naturally takes place.

There are also cases of semi-migratory birds (those I mean which change their quarters only to different parts of our own island) which are strangely difficult to account for: none more so, if I may take an instance from my own observation, than that of the Starlings as seen in my own home neighbourhood, where we never see one of these birds in the nesting time, whereas they

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appear in flocks towards the end of the summer. Is it that they can obtain suitable food for their young more easily in more favoured localities? At Oxford, for example, the young birds were mainly fed on the may-flies and alder flies—insects rarely to be seen in the South of Devonshire. Many more instances might doubtless be brought forward to illustrate the difficulty of assigning a *single*, or indeed *any intelligible*, cause for migration, but I think I have already mentioned enough to suggest to you the difficulties of the question, and must rest content with pointing out the explanations most commonly resorted to.

I pass on therefore to my second heading, feeling that the power of flight is inseparably connected with the question of migration: the endurance in this respect being very striking in some birds of apparently *slight* muscular power, whereas the rapidity of flight in those more highly gifted is almost incredible.

Notice then in the first place how perfectly the wing is adapted to its purpose. "No instrument could be so light and yet so powerful, so spacious when spread out, and yet so compact, and gathered into so small a compass when not required." "Some idea may be formed of the extraordinary strength of flight if we realise to ourselves that the great muscle of the wing weighs more than all the other muscles of the body put together, constituting not less than $\frac{1}{5}$ of the weight of the whole body."

What then is the speed of flight obtained by this great muscular development? I take first the most favourable instances, and find that the Swallow is said to accomplish 90 miles an hour; whilst the possible flight of the Swift has been by some daring experimentalist computed at 180 miles per hour. Again, a Carrier Pigeon, by name "Napoleon," once made the journey from London to his dove-cot in Holland, a distance of 300 miles, at the rate of above 50 miles an hour, supposing he lost not a moment in starting, and proceeded in a straight line.

With these data to start with, we cease to wonder at the long migratory flights of the Swallow tribe; but we may naturally ask ourselves how a bird of such small power of flight as the Landrail can even cross the Channel; yet this must be done by every one of these birds, which breed in England, none, I believe, remaining with us through the winter. Again, there are many instances quoted of our smaller land birds, being met with at sea, at very considerable distances from land; as the Tomtit (I quote from Stanley) 920 miles from the nearest shore, and a Tit-lark at even a greater distance, and an Owl gliding placidly over the midst of the Atlantic.

From this subject in turn I must pass on, hoping that you may feel that it merits some study on your own parts; and we will now proceed to the third heading of our original programme, and see whether we are justified in supposing that the instincts of home affection are as strong with some birds as they are in the heart of the typical Englishman.

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I think that I can easily show you that a considerable number of birds have a strong feeling of predilection in favour of some chosen locality, selected by them as a favourable nesting ground, or often forming their regular haunt through a great portion of the year. It is not of course very easy to prove that the self-same bird nests year after year in the same locality, though a nest belonging to the same species may be found there on many successive seasons. In a good many instances, however, Swallows have been caught and marked, and the same birds found to return in the following year to its old haunts. In the same way (taking for a moment the question of nesting alone) one is generally able to predict with certainty a crow's nest in such and such a copse; a hawk's nest in another; or a tomtit's in some particular hole, which offers peculiar attractions to the parent bird.

Finding these instances repeated year after year, I think we may safely infer that the self-same birds have an instinctive liking for their home quarters, and return to them rather than search for a convenient situation elsewhere.

Take one or two more instances: some of you will remember that a kingfisher's nest was found at Ramsbury, on one field day this summer, within a few yards of the spot where one had been taken last year—the same birds at work you will say, and perhaps you may be rewarded if you search the same place in the next nesting season, for the birds apparently return to their former homes in spite of a great deal of molestation.

Again you will find a water-ousel's nest, year after year, in some chosen spot, and the same thing may be predicted in the case of the fly-catcher, and no doubt of many other birds, possibly of many more than we commonly suppose, for the difficulties of observation, you must notice, in this matter are very considerable.

Leaving the question of a chosen nesting ground, we may enquire whether we do not see the same attachment to certain localities in the every-day habits of many birds. A woodcock, for example, may be found day after day in the same spot (except under severe stress of weather), and if you fail to bag him on the first opportunity, you will have a fair idea of where to look for him on the following day, and if need be, on many future occasions.

Something of the same kind may be said of the snipes, who are singularly partial to certain favourite spots. Again, you know that our friends, the rooks, besides returning in the spring to their old nesting ground, visit the well-known trees with great apparent interest constantly throughout the season. So too they have their fixed roosting places, to which (except in their breeding time,) they may be seen flocking towards dusk in tens of thousands, as is the case with their companions, the starlings.

Let me take one more instance. The Partridge seems to be singularly jealous of its right to a particular locality: you all know the exact spot where

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you can almost rely upon finding the old birds in the early spring and the young brood in the harvest time, and the strong covey in September, and how no amount of molestation will drive the birds effectually from their home. Then what happens, you will say, in the following season, supposing that half-a-dozen of our covey survive? Probably only one pair will nest on the identical spot to which they have established their claim by the law of the stronger, but let the season advance and you may be agreeably surprised by finding a new covey on your premises, brought back, as I have occasion to believe, by the parent birds seeking once more the home of their infancy.

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FLORA

OF

MARLBOROUGH,

BY THE

REV. T. A. PRESTON.

Second Edition.—Part III.

CHRISTMAS, 1874.

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FLORA OF MARLBOROUGH.

PART III.

III. COROLLIFLORÆ.

READILY known by the petals being united by their edges, so as to form a more or less tubular or funnel-shaped Corolla. The number of species in this division is very large, though the number of orders is comparatively small. Hence it is easy to fix the Order to which any particular species belongs, but in some of the larger Orders (*e.g.*, Compositæ) the determination of the genus is more troublesome.

It must be borne in mind that among Thalamifloræ, *Fumaria* and *Polygala* have their petals partially coherent, and that in *Malva* the petals are united to the tube formed by the filaments of the stamens, so that at first sight they appear coherent at their bases. Also among Calycifloræ, the petals are united in *Bryonia* and *Montia*, and coherent in *Trifolium* and *Anthyllis*. In the case of the two former only need any difficulty occur.

The Orders may be thus tabulated :—

Ovary Inferior.
- Stamens attached to Corolla.
  - Anthers cohering ... ... 57. Compositæ.
  - Anthers free.
    - Leaves whorled ... ... 34. Rubiaceæ.
    - Leaves opposite
      - Flowers in heads.
        - Plants prickly, 3 feet high ... 36. Dipsacaceæ.
        - Plants from 6 to 8 inches high ... 33. Caprifoliaceæ. (*Adoxa*).
        - Plants woody, climbing ... ... 33. Caprifoliaceæ.
      - Flowers not in heads.
        - Stamens as many as lobes of Corolla 33. Caprifoliaceæ.
        - Stamens fewer than lobes of Corolla 35. Valerianaceæ.

Stamens free from Corolla ... ... 38. Campanulaceæ.

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Ovary Superior.

Corolla wanting ... ... 41. Oleaceæ. (*Fraxinus*).

Stamens free from Corolla ... ... 39. Ericaceæ.

Stamens attached to Corolla.

Corolla regular, or nearly so.

Trees or Shrubs.

Stamens, two ... ... 41. Oleaceæ.

Stamens, four or five ... ... 40. Aquifoliaceæ.

Herbs.

Leaves 0 ... ... 45. Convolvulaceæ (*Cuscuta*).

Leaves opposite.

Fruit of two follicles ... ... 42. Apocynaceæ.

Seeds on sides of carpels ... 43. Gentianaceæ.

Seeds on a central placenta ... 52. Primulaceæ.

Leaves alternate.

Leaves pinnate ... ... 44. Polemoniaceæ.

Leaves not pinnate.

Stems twining ... ... 45. Convolvulaceæ.

Stems erect.

Fruit of four nuts ... 46. Boraginaceæ.

Fruit a capsule, or berry 47. Solanaceæ. *

Leaves all radical.

Corolla coloured ... ... 52. Primulaceæ.

Corolla thin and dry ... ... 53. Plantaginaceæ.

Corolla more or less irregular.

Seeds numerous, in two cells ... ... 49. Scrophulariaceæ

Seeds numerous, in one cell ... ... 48. Orobanchaceæ.

Seeds four.

Style from between the lobes of ovary ... 50. Labiatæ.

Style from tops of lobes of ovary ... 51. Verbenaceæ.

Among the more anomalous species may be noted—*Adoxa*, a small, insignificant plant, six or eight inches high, with a few radical leaves and a pair of opposite leaves on the stem, a creeping scaly root-stock, and a musky odour.

Fraxinus (Ash)—Without any Calyx or Corolla. The flower properly consists of a pistil and pair of stamens, but one or other are frequently wanting.

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* *Solanum Dulcamara* has shrubby climbing stems.

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Monotropa—Leaves reduced to scales, which become more crowded at the top of the stem, and are hardly distinguishable from the petals. The whole plant more like an *Orobanche* in appearance.

Cuscuta—Leafless parasites, with long thread-like stems.

33. CAPRIFOLIACEÆ.

An Order containing species very dissimilar in appearance, and therefore easily divided. The genus Adoxa was generally, until lately, united with Hederaceæ.

Herbs ... ... 1. Adoxa.
Shrubs or Trees.
Stem twining, flowers tubular ... ... 4. Lonicera.
Stem erect, petals spreading (*rotate*).
Leaves simple ... ... 3. Viburnum.
Leaves pinnate ... ... 2. Sambucus.

1. Adoxa Linn.

1. A. Moschatellina Linn. *Moschatel.*

Bab. 165. Hook. 175. Benth. 217.

Woods and Hedgebanks. P. March to May.

Rootstock creeping, scaly. Stem solitary, with a pair of ternate leaves. Radical leaves (few) bi-ternate, leaflets lobed. Heads, generally of five flowers, the terminal one with its Calyx two-lobed and its other parts in fours, the lateral ones, with the Calyx three-lobed, and the other parts in fives. The stamens apparently twice as many as the lobes of the Corolla, but as each has but one anther cell, it is probable that each stamen is really deeply cleft, so that the filament is very short and the connective lengthened out, bearing an anther lobe at each extremity, the whole stamen thus assuming the appearance of a Y.

Very generally distributed, abundant where a hedge or copse has been cut down.

1865.	April 1.	1870.	March 21.
1866.	March 30.	1871.	March 18.
1867.	March 9.	1872.	Feb. 21.
1868.	Feb. 27.	1873.	March 9.
1869.	Feb. 20, March 5.	1874.	March 4.

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2. Sambucus Linn.

1. S. nigra Linn. *Elder.*

Bab. 166. Hook. 174. Benth. 218.

Hedges, probably always planted. Tree May to July, and sometimes to Sept.

Leaves pinnate, with about two pairs of serrated leaflets and a terminal odd one. Flowers in large flat-topped cymes, white. Berries black, rarely green. The leaves of this plant are the first to appear in the early Spring.

Common.

1865.	May 8.	1870.	May 23.
1866.	June 2.	1871.	May 26.
1867.	May 23.	1872.	June 1.
1868.	May 14.	1873.	June 6.
1869.	May 3.	1874.	May 26.

3. Viburnum Linn.

The two species of this genus are readily distinguished.

Leaves simple, downy underneath, flowers all similar and perfect	1.	Lantana.
Leaves lobed, outer flowers barren	2.	Opulus.

1. V. Lantana Linn. *Mealy Guelder Rose, Wayfaring Tree.*

Bab. 166. Hook. 174. Benth. 218.

Hedges and Copses. Sh. April to June.

Young stems and leaves thickly covered with down. Leaves thick, wrinkled, downy, especially beneath. Flowers white, fruit red, but turning black when ripe.

Common.

1865.	April 29.	1870.	May 12.
1866.	May 5.	1871.	April 27.
1867.	May 4, 13.	1872.	April 16.
1868.	April 20.	1873.	May 5.
1869.	April 19.	1874.	April 28.

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2 V. Opulus Linn. *Common Guelder Rose.*

Bab. 166. Hook 174. Benth. 219.

Hedges and Copses. Sh. May, June.

Branches with raised lines when young. Leaves lobed, glabrous. Flowers white, outer ones completely barren and forming a broad white border to the cyme. When cultivated, the inner flowers are also barren, and force the outer ones back so as to cause the cyme to assume the shape of a ball. Stems and leaves more delicate than in sp. 1. Fruit red, translucent.

Generally, but not commonly distributed; not uncommon in the hedges at the foot of Forest Hill.

1865.	May 28.	1870.	May 29.
1866.	June 3.	1871.	May 26.
1867.	June 8.	1872.	May 30.
1868.	May 21.	1873.	May 29.
1869.	May 27.	1874.	May 31.

The barren flowers are generally expanded a few days before the fertile ones, but are still greenish. They become pure white when all the flowers of the cyme have fully opened. Cultivated specimens are still earlier, sometimes as much as a fortnight.

4. Lonicera Linn.

1. L. Periclymenum Linn. *Honeysuckle, Woodbine.*

Bab. 166. Hook. 175. Benth. 219.

Woods and hedges. Sh. June to October.

Stem woody, twining. Leaves distinct, sessile; lower ones shortly stalked. Flowers in dense heads, raised above the first pair of leaves, reddish outside, yellow within; berries red.

This must not be confounded with the Honeysuckle, commonly seen in cultivation; this latter has the upper pairs of leaves *connate*, *i.e.*, united by their bases, so that the stalk appears to pass *through* them, this is the *L. Caprifolium*.

Not uncommon.

1865.	June 12.	1870.	June 6.
1866.	June 6.	1871.	May 26.
1867.	June 15.	1872.	June 17.
1868.	June 3.	1873.	June 21.
1869.	June 2.	1874.	May 30.

L. Caprifolium is in flower much earlier.

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34. RUBIACEÆ.

Herbs with quadrangular stems and whorled leaves, *i.e.*, the leaves arranged in circles of four or more, round the same point of the stem. Corolla funnel-shaped, or flat, 4—6 lobed; ovary 2-celled.

Corolla funnel-shaped.

Calyx conspicuous, of six teeth ... ... 1. Sherardia.
Calyx inconspicuous ... ... 2. Asperula.
Corolla flat (rotate) ... ... 3. Galium.

1. Sherardia Linn.

1. S. arvensis Linn. *Blue Sherardia. Field Madder.*

Bab. 167. Hook. 180. Benth. 226.

Cultivated Fields. A. April to November.

Stems prostrate; leaves six in a whorl; flowers lilac, in terminal heads, surrounded by an involucrum of seven or eight leaves. Calyx-segments increasing after flowering.

Common.

1865.	April 30.	1870.	April 28.
1866.	May 4.	1871.	May 9.
1867.	May 15.	1872.	April 25.
1868.	May 2.	1873.	May 2.
1869.	April 20.	1874.	April 21.

2. Asperula Linn.

The two species of this genus are very easily distinguished by their leaves.

Leaves four in a whorl, very narrow ... ... 1. cynanchica.
Leaves six or nine in a whorl, broad ... ... 2. odorata.

1. A. cynanchica Linn. *Quinancy-wort.*

Bab. 167. Hook. 179. Benth. 226.

Dry grassy downs. P. June to September.

Leaves four in a whorl, linear, mucronate, unequal in length. Flowers more or less pinkish. Seeds wrinkled, glabrous.

Common on the Downs.

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1865.	June 1.	1870.	June 6.
1866.	June 23.	1871.	nearly out May 17.
1867.	Full bud June 18.	1872.	June 8.
1868.	June 11.	1873.	June 21.
1869.	Not observed.	1874.	Full July 4 (not general).

2. **A. odorata** Linn. *Sweet Wood-ruff.*

Bab. 168. Hook 179. Benth. 226.

Woods. P. May, June.

Rootstock creeping. Leaves 6—9 in a whorl, rather broad lanceolate, with rough margins. Flowers white; fruit rough, with hooked bristles. The whole plant smells like new hay when drying.

Common.

1865.	May 3.	1870.	May 12.
1866.	May 10.	1871.	April 24.
1867.	May 4.	1872.	April 30.
1868.	April 15, 28.	1873.	May 10.
1869.	April 26.	1874.	May 5.

3. Galium Linn.

Herbs with weak quadrangular stems, generally rough on the angles. Calyx inconspicuous. Corolla small, with four lobes, white or yellow.

Flowers yellow.

- Leaves four in a whorl, broad (ovate) ... ... 1. cruciatum.
- Leaves eight in a whorl, narrow (linear) ... ... 5. verum.

Flowers white or greenish.

Stems smooth.

- Leaves four in a whorl, fruit smooth ... ... 8. palustre.
- Leaves six in a whorl, fruit granular ... ... 6. saxatile.
- Leaves eight in a whorl, fruit glabrous ... 4. Mollugo.

Stems rough on the angles.

Fruit very small, plant perennial.

- Leaves four in a whorl, blunt ... ... 8. palustre.
- Leaves 6—8 in whorl, pointed ... ... 7. uliginosum.

Fruit large, plant annual.

- Fruit pedicels erect, fruit with hooked bristles 3. Aparine.
- Fruit pedicels bent downwards, fruit granular 2. tricorne.

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1. G. cruciatum With. *Crosswort.*

Bab. 168. Hook. 177. Benth. 223.

Hedges and Copses. P. April to June or July.

Rootstock creeping. Stems about two feet high, slender. Leaves four in a whorl, broad, hairy. Flowers pale yellow, small, in small cymes, shorter than the leaves; many of them barren.

Not very common.

1865.	April 24.	1870.	April 18.
1866.	April 27.	1871.	April 29.
1867.	May 10.	1872.	April 10.
1868.	April 19.	1873.	April 30.
1869.	April 19.	1874.	April 26.

2. G. tricorne With.

Bab. 169. Hook 179. Benth. 225.

Cultivated fields. A. July.

Not unlike *G. Aparine*, but not so tall. The flowers three together; the fruit granulated, not hairy, and the fruit stalks curiously bent down; whence it can be readily distinguished.

Scarce. Discovered by F. E. Thompson, Esq., at Bedwyn (Div. II.) Subsequently discovered in a field near Rabley Copse (Div. III.)

3. G. Aparine Linn. *Goose-grass. Cleavers.*

Bab. 169. Hook. 179. Benth. 225.

Hedges. A. May to November.

Stems very long, very rough. Leaves 6—8 in a whorl, narrow lanceolate; rough all over, with backward prickles (except the marginal ones at the tips of the leaves, which point forwards). Flowers three or five together, very small whitish. Seeds covered with hooked bristles.

Very common.

1865.	May 3.	1870.	April 28.
1866.	May 10.	1871.	May 6.
1867.	May 9.	1872.	May 5.
1868.	May 9.	1873.	May 15.
1869.	April 30.	1874.	May 5.

4. G. Mollugo Linn. *Hedge Bedstraw.*

Bab. 170. Hook. 178. Benth. 224.

Hedges. P. June to October.

Stem weak from two to four feet or more in length, thickened at the joints. Leaves 6—8 in a whorl, with rough margins and a small point at the tip. Flowers numerous, white; lobes of corolla pointed.

Abundant.

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1865.	June 14.	1870.	May 28.
1866.	June 15.	1871.	June 21.
1867.	June 14.	1872.	June 16.
1868.	May 31.	1873.	June 27.
1869.	June 2.	1874.	June 12.

5. G. verum Linn. *Lady's Bedstraw.*

Bab. 170. Hook. 177. Benth. 223.

Dry banks and pastures. P. June to October.

Stems one or two feet high, rather woody, slightly angular and downy. Leaves about eight in a whorl, linear, pointed, dark green. Flowers very numerous, golden yellow.

Abundant.

1865.	June 19.	1870.	June 17.
1866.	Nearly out June 29.	1871.	May 26.
1867.	Young bud June 15	1872.	June 21.
1868.	June 19.	1873.	June 28.
1869.	Coloured bud June 20.	1874.	June 30.

6. G. saxatile Linn. *Heath Bedstraw.*

Bab. 170. Hook. 178. Benth. 224.

Dry grassy places. P. June, July.

Stems about six inches long, tufted, weak. Leaves generally six in a whorl (on the barren branches sometimes only four), with a small point at the tip, the margins, with a few *forward* prickles. Flowers numerous, white. Plant turns black in drying.

Not uncommon.

1865.	May 23.	1870.	June 11.
1866.	June 7.	1871.	June 11.
1867.	Bud May 27.	1872.	June 10.
1868.	June 1 (Chisledon).	1873.	June 12.
1869.	June 10.	1874.	June 12.

7. G. uliginosum Linn. *Swamp Bedstraw.*

Bab. 171. Hook. 178. Benth. 223.

Wet places. P. June, July.

Stem slender, brittle, about one foot high, very rough on the edges. Leaves 6—8 in a whorl, pointed with a small bristle at the tip, the margins rough, with *backward* prickles. Flowers small, white. Known from species 8 by its leaves, and by not turning black in drying.

Not uncommon.

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1868. May 19.	1870. June 25.
1869. June 2.	1873. June 28.

8. G. palustre Linn. *Marsh Bedstraw.*

Bab. 171. Hook. 177. Benth. 223.

Wet places: P. June to September.

Stems from one to four feet high, but very variable. Upper leaves in fours (of which two are smaller) and blunt, by which it may generally be recognised even when growing in dry places. The angles of the stem are generally nearly smooth; when conspicuously rough, it is the var. *Witheringii* of Smith. Flowers small, white. The whole plant turns black in drying.

Common.

1869. June 19.	1872. June 21.
1870. June 10.	1873. June 26.
1871. About June 20.	1874. June 16.

35. VALERIANACEÆ.

In all the species of this Order, known as growing wild about Marlborough, the Corolla is five-lobed, and there are but three stamens. The two Genera are readily known by the *seed*, but as other characters are necessary, the following distinctions have been selected.

Perennial; limb of calyx becoming a feathery *Pappus*.

Flowers pink, stem leaves pinnate, or pinnatifid ... 1. Valeriana.

Annual; limb of calyx 0 or toothed.

Flowers pale blue, very small, stem leaves more or less toothed ... ... 2. Valerianella.

1. Valeriana Linn.

1. V. officinalis Linn. *All-heal. Cat's Valerian.*

Bab. 172. Hook. 181. Benth. 228.

Moist places, ditches, woods. P. June to September.

Stems from two to four feet high. Leaves all pinnate, root leaves on long stalks, soon withering. Flowers pink, in large cymes.

Common.

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1865.	June 7.	1870.	June 12.
1866.	June 21.	1871.	Not observed.
1867.	Full bud June 8.	1872.	June 13.
1868.	Full June 10.	1873.	June 16.
1869.	Bud June 10.	1874.	June 12.

2. V. dioica Linn. *Marsh Valerian.*

Bab. 172. Hook. 181. Benth. 228.

Boggy places. P. May, June.

Rootstock creeping. Stems about a foot high. Lower leaves entire, stems leaves deeply cut; barren and fertile flowers on different plants, the latter smaller and darker.

Commonly distributed.

1865.	May 10.	1870.	May 12.
1866.	May 3.	1871.	April 25.
1867.	May 8.	1872.	April 20.
1868.	May 2.	1873.	May 1.
1869.	April 30.	1874.	May 5.

2. Valerianella Mœnch.

Inconspicuous plants, very similar in appearance, and mainly distinguished by their seed. Only three of the four species have as yet been detected about Marlborough, probably on account of the uncertainty attaching to specimens on which no seeds have been found. The fruit is strictly three-celled, but two of the cells are empty.

Limb of calyx indistinct ... ... 1. olitoria.

Limb of calyx of one oblique tooth.

Barren cells very distinct ... ... 2. Auricula.

Barren cells reduced to ribs ... ... 3. dentata.

1. V. olitoria Mœnch. *Corn-Salad.*

Bab. 173. Hook. 181. Benth. 229.

Corn-fields and banks. A. May, June.

Stems branching from the base, about six inches high. Leaves slightly toothed, sessile. The fruit, when cut across, will show a seed in the centre, a corky mass at one side, and an empty cell on the other; this cell has a groove down its front, so that it is evidently made up of the two confluent empty cells.

Widely distributed, but not common.

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1865. April 25.	1870. April 17.
1866. April 27.	1871. April 28 (?).
1867. March 23.	1872. Feb. 21, April 12.
1868. April 12.	1873. April 29.
1869. April 22.	1874 May 7.

Specimens may often be found in flower as late as November.

2. V. Auricula D.C.

Bab. 173. Hook. 182. Benth. 230.

Cultivated land. A. June.

Similar in appearance to the last, but more slender and wiry, and the leaves with more prominent teeth at the base. The fruit, on being cut across, shews one cell with a seed in it, and two rather larger empty ones.

Only as yet detected in a field near Pentawick, June 17th, 1873.

3. V. dentata Deitr.

Bab. 173. Hook. 182. Benth. 230.

Corn-fields. A. May, June.

Very similar to the last; leaves often with long teeth at their bases. Flowers more pinkish. The fruit, when cut across, shows a single cell, occupied by the seed, and two ribs on the outside, which represent the two barren cells.

Very generally, though sparingly distributed. Occurs most frequently in the fields about Martinsell.

1870. June 12.
1871. Full May 9.
1873. July 19.

Specimens may occasionally be found in flower as late as November.

36. DIPSACACEÆ.

Flowers arranged in heads, with a common involucre of bracts. In addition to the usual calyx, each flower has also an outer calyx, composed of a bract, or series of bracts, which entirely covers the ovary. The receptacle on which the florets are placed is also furnished with a number of scales or hairs between the florets. Stamens four, anthers not coherent, which character distinguishes this Order from *Compositæ*.

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Scales of receptacle with a sharp point, projecting beyond the florets ... ... 1. Dipsacus.
Scales of receptacle blunt, not projecting beyond florets 3. Scabiosa.
Scales of receptacle reduced to hairs ... ... 2. Knautia.

1. Dipsacus Linn.

The two species of this genus may be thus distinguished.
Heads large, conical, flowers lilac ... ... 1. sylvestris.
Heads small, globose, flowers white... ... ... 2. pilosus.

1. D. sylvestris Linn. *Wild Teasel.*
Bab. 174. Hook. 183. Benth. 231.
Roadsides. B. August, September.

Stem very prickly; leaves opposite, simple, sessile, those of the stem united at their bases so as to form a hollow cup, frequently containing water. Heads of flowers large, conical, over-topped by the involucre.

Generally distributed, but by no means common.

D. pilosus Linn. *Shepherd's Rod.*
Bab. 174. Hook. 183. Benth. 231.
Moist shady places. B. August, September.

Stem rough, slender. Leaves stalked with a leaflet at the base on each side. Heads of flowers globose, larger than the involucre.

III.—Ramsbury and probably also at Binck Knoll, though I have never seen the plant in flower there.

2. Knautia Coult.

1. K. arvensis Coult. *Field Scabious.*
Bab. 175. Hook. 184. (Scabiosa). Benth. 233. (Scabiosa).
Hedges and dry fields. P. May or June to November.

Stem about three feet high. Lower leaves lanceolate; stem leaves pinnatifid, but sometimes all the leaves are entire or all pinnatifid. Flowers pale purple, in large heads, with long stalks; corollas unequally four-lobed, those of the outer florets much larger.

Common.

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1865.	June 7.	1870.	May 28.
1866.	June 8.	1871.	June 8.
1867.	June 15.	1872.	June 13.
1868.	May 31.	1873.	June 11.
1869.	May 27.	1874.	May 12.

3. Scabiosa Linn.

1. S. succisa Linn. *Devil's-bit.*

Bab. 175. Hook. 183. Benth. 232.

Woods and Copses. P. July to October.

Rootstock short and thick. Stem 1 to 3 feet high. Leaves mostly radical, oblong, those on the stem few and toothed. Heads hemispherical, of deep blue flowers. Florets four-lobed and all nearly similar.

Common in the Copses.

Rarely out in June; on June 1st, 1868, and June 18th, 1873; not out in July, 1874.

2. S. Columbaria Linn. *Small Scabious.*

Bab. 175. Hook. 184. Benth. 232.

Dry Pastures. P. June to Nov. or Dec.

Leaves very variable; radical leaves generally simple, lanceolate, upper ones pinnatifid, with very narrow segments. Stems slender, flowers pale purple, in rather conspicuous, long-stalked heads. Corolla five-cleft, those of the outer florets much larger. The whole plant bears some resemblance to *Knautia*, but the five-cleft corolla and the scales of the receptacle sufficiently distinguish the two.

Abundant on the Downs.

1865.	June 7.	1870.	June 12.
1866.	——	1871.	June 2.
1867.	June 20.	1872.	——
1868.	May 31.	1873.	July 3.
1869.	——	1874.	June 12.

37. COMPOSITÆ.

The most extensive family of flowering plants, and yet one very easily recognised; but from the number of species it contains it is frequently very difficult to discriminate them. All the British species are herbaceous, the

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leaves mostly alternate; the florets collected into *heads* on the flattened summit of the stalk (*receptacle*), and surrounded with one or more rows of bracts, forming an involucre. The receptacle occasionally bears a number of hairs or scales between the florets, and is then said to be *scaly*, when these are absent, the receptacle is said to be *naked*. The Calyx is closely adherent to the ovary in its lower part; the upper part or *limb* is either absent, or appears as an elevated ring or circle of scales or hairs, more or less feathery, this latter is called a *pappus*. Pistil one, the style divided at the top into two branches bearing the stigmas. Stamens, almost invariably 5, inserted into the tube of the corolla, the anthers united into a ring round the style. This is one of the most important characters of this order, and is hardly ever found in any other. Corolla either *tubular* with generally 5 lobes, or *ligulate*, i.e., with the tube split-down nearly to the base and then flattened out, forming a ribbon-shaped corolla. These different characters are so constant, that it becomes a very difficult matter to tabulate the genera without using some of the less obvious, (though perhaps more important) characters.

(1) Florets all tubular. This division embraces the *Thistles*, generally known by their purple flowers and prickly leaves and involucres, though there are of course other genera included in this division.

(2) Central florets (called *florets of the disc*) tubular, outer ones ligulate and longer (forming a *ray*). Of this division the *Daisy* may be taken as a type. The florets of the disc are yellow, and those of the ray generally white less frequently yellow, rarely blue.

(3) Florets all ligulate, of which the *Dandelion* may be taken as a type. The flowers of this division are almost invariably yellow, very rarely blue.

The following table will, it is believed, hold true for Marlborough plants.

(I) Florets all tubular.

Leaves opposite.

Pappus hairy, flowers purple ... ... 1. Eupatorium.

Pappus of barbed bristles (generally 2) flowers yellowish brown ... ... 18. Bidens.

Leaves alternate or radical

Pappus present.

Bracts of involucre prickly.

Inner bracts resembling a ray ... 19. Carlina

Bracts all similar.

Receptacle honeycombed ... 23. Onopordum.

Receptacle scaly, not honeycombed ... ... 24. Carduus.

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Bracts of involucre hooked ... ... 20. Arctium.
Bracts of involucre not prickly.
Receptacle scaly.
Leaves all similar ... ... 24. Carduus.
Leaves variable ... ... 21. Serratula
Receptacle naked, plant cottony 10. Gnaphalium.
Pappus wanting
Bracts of involucre with a fringed appendage at the top ... ... 22. Centaurea.
Bracts of involucre with a membranous border ... ... 16. Tanacetum.

(II) Florets not all tubular but the outer ones not much larger than the inner.

Leaves opposite ... ... 18. Bidens.
Leaves alternate.
Pappus wanting.
Flowers yellow, leaves 2 pinnatifid ... 16. Tanacetum.
Flowers dull white, leaves broad, woolly beneath ... ... 15. Artemisia.
Pappus present.
Flowers (pink), appearing before the leaves ... ... 2. Petasites.
Flowers appearing after the leaves.
Leaves pinnatifid ... ... 17. Senecio.
Leaves simple.
Flowers yellow, ray blue ... 4. Erigeron.
Flowers all yellow.
Plant woolly ... ... 9. Filago.
Plant not woolly ... ... 7. Inula.

(III) Florets of the disc tubular, of the ray ligulate and longer.

Pappus wanting, ray white.
Receptacle scaly.
Florets of ray long, heads large ... 12. Anthemis,
Florets of ray short, heads small ... 11. Achillea.
Receptacle naked.
Leaves undivided.
Flower stalks not leafy... ... 5. Bellis.
Flower stalks leafy ... ... 14. Chrysanthemum.
Leaves pinnate or much divided. ... 13. Matricaria.
Pappus wanting, ray yellow ... ... 14. Chrysanthemum.

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Pappus present.
Florets of the ray blue ... ... 4. Erigeron.
Florets of the ray yellow.
Leaves divided ... ... 17. Senecio.
Leaves simple.
Flowers appearing before the leaves ... ... 3. Tussilago.
Flowers appearing after the leaves.
Heads of flowers small, in racemes ... ... 6. Solidago.
Heads of flowers large.
Heads terminal, plant 2 feet high 8. Pulicaria.
Heads, 4 or 5 at the end of a solitary stem, 6 to 12 inches high ... 17. Senecio.

(IV) Florets all ligulate.
Pappus wanting, flowers yellow ... ... 25. Lapsana.
Pappus scaly, flowers blue ... ... 26. Cichorium.
Pappus present.
Receptacle scaly ... ... 27. Hypochoeris.
Receptacle naked.
Leaves all radical or nearly so.
Hairs of pappus feathery.
Pappus of outer row of florets reduced to scales ... ... 28. Thrincia.
Pappus of all florets feathery ... 29. Leontodon.
Hairs of pappus not feathery... ... 34. Taraxacum.
Stem leaves present.
Hairs of pappus simple.
Heads of flowers small scattered racemose ... ... 33. Lactuca.
Heads of flowers corymbose or terminal.
Juice milky.
Pappus dirty white ... 37. Hieracium.
Pappus white.
Fruit narrowed into a beak ... ... 36. Crepis.
Fruit not beaked ... 35. Sonchus.

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Hairs of pappus feathery.
Fruit with a long beak
Outer bracts broad, prickly 32. Helminthia.
Bracts narrow, glabrous ... 30. Tragopogon.
Fruit with a short beak ... ... 31. Picris.

Divisions I and II are often scarcely distinguishable, in fact the ligulate flowers are frequently absent, and hence the same species will appear in each. The general appearance of flowers in Division I is that of Thistles, in fact Bentham calls them Thistle-heads. There are 4 genera, which have no similarity to Thistles, but which are yet included in this division, as having tubular florets. These are *Eupatorium*, *Bidens*, *Gnaphalium*, and *Tanacetum*. The first and fourth of these are tall plants, the former with pale pink flowers, the heads arranged in large clusters or corymbs, the latter with dull yellow flowers, the leaves much divided, so as almost to assume the appearance of feathers. The species of *Bidens* grow in water, whilst those of *Gnaphalium* are cotteny plants growing in woods or damp (not watery) soil, with very small heads of flowers. In Division II. *Filago* is a small plant covered with cottony wool growing on dry soil. *Petasites* is a plant whose flowers appear before the leaves, which latter often ultimately grow to an enormous size—it is an essentially marshy plant. *Artemisia*, *Erigeron* and *Inula* have almost woody stems. The Marlborough species of *Artemisia* is a tall plant, with cottony wool on the under side of its broad leaves. *Inula* is a smaller plant with yellow flowers, whilst *Erigeron* has a ray of bluish flowers, but generally not much longer than the abundant pappus. *Senecio* is included in this division because the commonest species, *S. vulgaris*, the *Groundsel*, has very rarely any ligulate flowers, though all the other species of the genus belong to Division III.

In Division III. of the five genera forming the first half, all but *Achillea* have flowers resembling a daisy, one species (*Chrysanthemum segetum*) alone having a yellow ray. *Achillea* may be readily distinguished by the heads of flowers being collected into flat-topped clusters or *corymbs*.

The other half of Division III. need not present any difficulty. *Senecio campestris* is a plant from 6 to 12 inches high, with a solitary stem crowned with 4 or 5 heads of flowers, occurring occasionally, though uncommonly, on the Downs.

Division IV. has flowers more or less like the Dandelion, and all yellow (except *Cichorium*). *Lapsana* is known at once by its having no pappus, and *Hypochœris* by its having a scaly receptacle. *Taraxacum* (the well-known *Dandelion*) has smooth, hollow, solitary flower stems, and *Hieracium Pilosella* has also solitary flower stems, but solid and rough; it has also pale yellow flowers and creeping stems. The other species of *Hieracium* which occur

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about Marlborough have (when fully developed) rough, leafy stems, branched in the upper part, each branch terminated by a large head of flowers. *Picris* is in many points similar to *Hieracium*, but may be known by its feathery pappus; the hairs on the stems are also hooked, and thus cause the plants to cling when touched. The only other species with really rough stems are *Helminthia* (which may be known at once by its outer bracts, which are broad and prickly: the whole plant is also stouter and covered with stiff bristles, each one springing from a white wart-like base) and *Leontodon hispidus* (known by its solitary flower stems, and all its leaves springing from the root).

Sonchus, *Lactuca*, and *Crepis* have but few hairs on the stems, and those principally near the root, but they cannot be said to have *rough* stems. *Lactuca* is known at once by its small heads of flowers, arranged like a raceme on the stem. *Sonchus* and *Crepis* are generally very distinct in appearance, though the latter is so variable that it is difficult to put any definite characters on paper. The former is a coarse, thick-looking plant, the latter much more delicate, with the flower stalks slender. *Tragopogon* is readily known by its thin grass-like leaves and long bracts, all quite destitute of hairs.

It only remains to notice those plants which do not have branched flower stems. These are *Thrincia hirta*, *Leontodon hispidus*, *L. autumnalis*, (besides the two mentioned above, viz., *Taraxacum* and *Hieracium pilosella*). Of these three *L. hispidus* never has branched stems, the other two occasionally, and perhaps not unfrequently have more than one head of flowers on each stem. And on the other hand Crepis virens may also be found with but a single head on each stem. It will be necessary therefore to discriminate between *Taraxacum*, *Hieracium Pilosella*, *Thrincia hirta*, *Leontodon hispidus*, *L. Autumnalis* and *Crepis virens*.

Rough Stems.—H. Pilosella, L. hispidus. The former has pale yellow flowers, creeping stems, with the underside of the leaves covered with white cottony hairs. The latter has large yellow terminal flowers, and all the leaves radical.

Smooth Stems.—Taraxacum, Thrincia, L. autumnalis, C. virens. Taraxacum has thick hollow stems, the fruit lengthening out into a long beak at the top of which is the hairy pappus.

The other three are much more difficult to discriminate; in L. autumnalis the flower-stalk is much thickened at the top, so that there is no positive distinction externally between the stem and the receptacle, and this is rendered still less obvious by the numerous scales which are scattered all over the stem, increasing in number as they approach the head of flowers. The whole stem, therefore, has a coarse thick appearance. *Crepis* on the other hand has (in cases where it has few flowered stems) very thin stalks and smaller heads of

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flowers, the stalks not in any degree thickened near the flower head. *Thrincia* approaches very near to *L. autumnalis*, but the non-thickened flower stalks, together with the absence of a pappus on the outer florets form the main distinctions. It is a very common plant in dry pastures, but from its similarity to *L. autumnalis* has until recently been overlooked.

1. Eupatorium Linn.

1. E. cannabinum Linn. *Hemp-Agrimony.*

Bab. 182. Hook. 194. Benth. 237.

Moist places. P. Aug. to Oct.

Stem herbaceous, 3 feet or even higher. Leaves downy, opposite, divided into 3 or 5 deep segments. Florets pale purple, all tubular, in small heads of about 5 or 6 flowers, the heads arranged in large conspicuous corymbs.

Frequent.

1865. Nearly out June 27.
1866. Just in fl. Aug. 22.
1870. July 9.
1874. July 28?

2. Petasites Gaert.

1. P. vulgaris Desf. *Butter-bur.*

Bab. 182. Hook. 194. Benth 237. (Tussilago Petasites).

Swampy places. P. Feb. to May.

Rootstock extensively creeping. Leaves all radical, appearing after the flowers, often exceeding those of any other British plant, roundish heart-shaped, undivided, unequally toothed, at first cottony all over, but afterwards glabrous above, downy beneath. Florets pale purple. There are two distinct forms, one (the sub-male) in which the florets are mostly barren, the corolla bell-shaped, and though a style is present, there is no ovary; the other (the sub-female) in which the corolla is shorter and more slender. Heads of flowers arranged in racemes, those of the sub-male short and crowded, of the sub-female longer and lengthening still more after flowering. Flower stalks clothed with numerous scaly bracts, some of which are terminated with a flat green limb.

Common.

1865. Ap. 10.
1866. Mch. 9.
1867. Feb. 25.
1868. Feb. 28.
1869. Feb. 25.
1870. Mch. 10.?
1871. Mch. 10.
1872. Feb. 26.
1873. Feb. 26.
1874. Feb. 18.

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3. Tussilago Linn.

1. T. Farfara Linn. *Coltsfoot.*

Bab. 183. Hook. 195. Benth. 237.

Damp, heavy soils. P. Feb. to May.

Rootstock creeping. Leaves all radical, appearing after the flowers, roundish heart-shaped, more or less cottony above, densely cottony beneath. Florets yellow; those of the disc tubular, of the ray narrow ligulate; heads solitary, on long stalks, six inches to one foot high, clothed with scales; heads drooping just before flowering, erect at other times.

Common.

1865.	April 1.	1870.	March 9.
1866.	February 23.	1871.	March 4.
1867.	February 11.	1872.	February 13.
1868.	February 21.	1873.	March 11.
1869.	February 14.	1874.	February 4, 12.

4. Erigeron Linn.

1. E. acris Linn. *Blue Fleabane.*

Bab. 183. Hook. 196. Benth. 239.

Dry gravelly places. A. or B. May to July.

Stem six to twelve inches high, branched above. Leaves narrow lanceolate, entire. Florets of the disc tubular, yellow, those of the ray narrow, ligulate, purple, scarcely longer than the pappus. Heads terminal, the whole forming an irregular panicle.

Railway Bank, near Savernake Station.

1870. May 21.

1871. May 6.

Though observed yearly, we have seldom been able to get a proper date for first flowering.

5. Bellis Linn.

1. B. perennis Linn. *Daisy.*

Bab. 184. Hook. 196. Benth. 243.

Pastures. P. All the year.

Rootstock branched, each branch terminating in a rosette of leaves.

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Leaves thick, rounded and crenate at the end, contracted into a winged foot-stalk. Flower-stalks leafless. Florets of the disc tubular, yellow, those of the ray ligulate, white and more or less pinky at the tips. Pappus wanting; receptacle conical after flowering.

Very common.

Specimens may almost always be found in flower throughout the year.

6. Solidago Linn.

1. S. Virgaurea Linn. *Golden-rod.*

Bab. 184. Hook. 196. Benth. 240.

Woods. P. August to October.

Stem from one to two feet high, occasionally with a few short branches above. Leaves lanceolate, upper ones acute, lower ones more rounded, all hairy, and more or less serrate on the edges. Florets golden yellow, inner tubular, outer ligulate, in small heads, arranged in a paniole along the upper portions of the stems.

Copse near Clatford Park Farm.

7. Inula Linn.

1. I. Conyza D.C. *Ploughman's Spikenard.*

Bab. 185. Hook. 197. Benth. 242.

Dry Banks. B. August to September.

Stem 1 to 2 feet high, downy. Leaves lanceolate, their margins slightly dentate, downy, especially beneath; upper sessile, lower stalked. Flowers yellow, inner tubular, those of the ray ligulate, but with a very short ligule, and not exceeding those of the disc. Heads arranged in corymbs at the tops of the stems.

Axford.

8. Pulicaria Gaert.

1. P. dysenterica Gaert. *Fleabane.*

Bab. 185. Hook. 198. Benth. 242.

Damp places. P. August to October.

Rootstock creeping. Stem one to two feet high, downy, branched, and very leafy. Leaves oblong, cordate at the base, embracing the stem, downy,

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especially beneath, irregularly waved or toothed at the edges. Florets yellow, those of the ray ligulate, and much longer than the tubular ones of the disc. Heads large, few, terminal.

Distributed, but not common.

9. Filago Linn.

1. F. germanic Linn. *Cudweed.*

Bab. 186. Hook 206. Benth 252. (Gnaphalium).

Dry fields. A. July to Oct.

Whole plant thickly covered with white cottony hairs. Stems from 6 to 12 inches high, generally simple, or several from the crown of the root, rarely branched, clothed with numerous alternate leaves, Each stem ends in a cluster of heads, surrounded, but not overtopped by leaves. From just below this cluster generally spring a pair (rarely more or less) of branches, similarly terminating in a cluster, and in vigorous specimens this branching is repeated as many as 6 times or more. These clusters are composed of from 12 to 40 heads of florets. Leaves long, linear, generally wavy at the edges.

Very generally distributed, but not common.

10. Gnaphalium Linn.

Very closely allied to Filago, (which is included in this genus by Bentham) but differing from it in not having any scales on the receptacle. The two species occurring near Marlborough are very easily distinguished.

Flower heads in terminal clusters. An annual ... ... 1. uliginosum.

Flower heads in leafy spikes. A perennial ... ... 2. sylvaticum.

1. G. uliginosum Linn.

Bab. 187. Hook. 205. Benth. 252.

Moist sandy places. A. July to Oct.

Whole plant densely woolly. Stems from 3 to 6 or even 12 inches high, much branched, leafy, solitary, or several from the crown of the root, in which case they are decumbent at the base. Leaves long, narrow, cottony, especially underneath. Florets pale yellow, in small heads surrounded with dark brown bracts, collected into clusters at the ends of the branches and overtopped by the surrounding leaves.

Commonly distributed.

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2. G. sylvaticum Linn.

Bab. 187. Hook. 204. Benth. 252.

Woods. P. August to October.

Stems from 4 inches to 2 feet high, simple, leafy, covered with white cottony hairs. Leaves long and narrow, white beneath. Heads in clusters forming an interrupted leafy spike.

I.—Near Tan Coat Lane; Martinsell; West Woods; New Mill; near Pewsey; Woodborough (Railway Bank).

II. Chisbury.

11. Achillea Linn.

The two British species, which are both found about Marlborough, may be thus distinguished—

Leaves linear serrated ... ... 1. Ptarmica.

Leaves much divided (3-pinnatifid) ... ... 2. Millefolium.

1. A. Ptarmica Linn. *Sneezewort.*

Bab. 188. Hook. 200. Benth. 247.

Moist Meadows. P. Aug. to Oct.

Rootstock creeping. Stem 1 to 2 feet high, slightly branched. Leaves linear, pointed, sharply serrate, very variable in breadth, shining. Heads of flowers rather conspicuous, not numerous, arranged in a flat-topped corymb.

Occurs in the neighbourhood of the Kennett (not on the banks), at Mildenhall and near Littlecote Also at Chisledon and near Martinsell.

2. A. Millefolium Linn. *Yarrow. Milfoil.*

Bab. 189. Hook. 201. Benth. 247.

Pastures and waste ground. P. May to November.

Rootstock creeping. Stem six to eighteen inches high, generally woolly, leafy, rarely branched. Leaves long, narrow, twice or thrice pinnatifid, so as to give them a feathery appearance. Florets of the disc whitish, of the ray white or pink.

Very common.

1865. May 23.	1870. May 21.
1866. June 21.	1871. May 26.
1867. June 14.	1872. May 24.
1868. May 31.	1873. May 28.
1869. June 4.	1874. May 25.

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12. Anthemis Linn.

This and the next genus (Matricaria) are in many points very similar, but the *scaly receptacle* of this genus serves as a well-marked distinction. These scales also serve as distinguishing marks between the species. Each scale has a central rib, with a membranous border on each side. This border either (1) ends abruptly, leaving the midrib projecting at the top or (2) entirely surrounds the midrib, forming a broad blunt scale, or (3) forms a very narrow border on each side, so that the scale presents the appearance of a thickish hair. The presence or absence of styles in the florets of the ray is also taken as a distinctive mark, but does not appear to me to be so constant a one as the scales of the receptacle.

Scales lanceolate, abruptly ending in an acute point ...	1. arvensis.
Scales broad, obtuse	3. nobilis.
Scales very narrow, acute	2. Cotula.

1. **A. arvensis** Linn. *Corn Chamomile.*

Bab. 189. Hook. 200. Benth. 246.

Cultivated ground. A. June to September or October.

Stem one to two feet high, hoary. Leaves 2-pinnatifid, the segments of the leaves very narrow, but not so much as in the other two species. Florets of the ray with styles. Heads solitary on long stalks, which are slightly enlarged at the top.

Not common.

I.—Fields about Clench, Tan Coat Lane and West Woods.

II.—Bedwyn.

III.—Mildenhall.

2. **A. Cotula** Linn. *Stinking May-weed.*

Bab. 190. Hook. 200. Benth. 246.

Fields and waste places. A. June to Nov.

Plant glabrous and strongly smelling when rubbed. Stem 1 to 2 feet high, branched, angular. Leaves finely divided. Florets of ray usually without styles. Heads solitary, on long stalks, not enlarged at the top.

Not uncommon.

1866. June 19.	1873. July 8.
1870. June 17.	1874. June 2.
1872. June 23.	

3. **A. nobilis** Linn. *Chamomile.*

Bab. 190. Hook. 200. Benth. 246.

Gravelly places. P. July to September.

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Rootstock slightly creeping. Stems about 1 foot high, procumbent, branched, pubescent. Leaves finely divided. Heads solitary, on long leafy stalks. Plant aromatic.

Has been but rarely observed. Preshute is the only locality recorded, though it has been found elsewhere.

13. Matricaria Linn.

Receptacle naked.
Leaves pinnate, leaflets broad ... ... 1. Parthenium.
Leaves finely divided.
Receptacle hollow, plant aromatic ... ... 3. Chamomilla.
Receptacle solid, plant scentless ... ... 2. inodora.

1. M. Parthenium Linn. *Fever-few.*

Bab. 190. Hook. 202. Benth. 244. (Chrysanthemum).

Walls and waste places. P. June to October.

Stems from 1 to 2 feet high, branched in the upper part, and slightly downy. Leaves pinnate, leaflets broad and deeply cut. Heads of flowers in corymbs terminating the stems and branches. Plant aromatic.

Uncommon, but probably always an escape.

2. M. inodora Linn. *Corn Feverfew.*

Bab. 190. Hook. 202. Benth. 245.

Fields and waste places. A. May to November.

Stems from 12 to 18 inches high, branched, glabrous. Leaves finely divided. Heads of flowers large, terminal. Plant scentless.

Very abundant.

Specimens may generally be found in flower all through the year, but less frequently from January to May.

1865. May 28.	1870. April 27, May 3.
1866. May 20.	1871. April 6.
1867. ——	1872. May 5.
1868. May 9.	1873. May 22.
1869. May 1, 15.	1874. May 18.

3. M. Chamomilla Linn. *Wild Chamomile.*

Bab. 191. Hook. 201. Benth. 245.

Cultivated and waste ground. A. June to August.

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Very similar to the last, but distinguished by its aromatic odour, and its hollow receptacle. "The ray is shorter and reflexed immediately after flowering, which does not occur in *M. inodora* till a later period."

Has, as yet, only been detected near Marlborough, at Barton Farm and Preshute. Possibly has been overlooked

14. Chrysanthemum Linn.

The two species of this genus are distinguished at once by the colour of the ray.

Ray white	1.	Leucanthemum.
Ray yellow	2.	Segetum.

1. C. Leucanthemum Linn. *Ox-eye.*

Bab. 191. Hook. 202. Benth. 244.

Fields and waste places. P. May to September or October.

Stems from one to two feet high, erect, simple or branched. Stem leaves sessile, cut, pinnatifid at their base, radical leaves stalked, obovate and cut at the extremity. Heads of flowers large, solitary, on long leafy stalks. Bracts narrow, with dark margins.

Very common.

1865.	May 12.	1870.	May 16.
1866.	May 20.	1871.	May 19.
1867.	May 16.	1872.	May 9.
1868.	May 16.	1873.	May 13.
1869.	May 22.	1874.	May 17.

2. C. segetum Linn. *Corn Marigold.*

Bab. 191. Hook. 202. Benth. 244.

Cultivated fields. A. June to October.

Stems about a foot high, glabrous, branched. Leaves ovate, with deeply cut teeth; lower ones stalked, upper sessile and clasping the stem; they are also less cut as they approach the heads of flowers, which are large, solitary, and terminal. Bracts broad, with thin membranous margins.

Occurs plentifully between New Mill and Pewsey, on the Greensand, but very rarely (and then evidently only the result of cultivation) nearer Marlborough.

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15. Artemisia Linn.

1. A. vulgaris Linn. *Mugwort.*

Bab. 192. Hook. 203. Benth. 249.

Hedges and waste ground. P. July to September.

Stems from two to three feet high, reddish, branched, leafy. Leaves broad, green above, white and woolly beneath, pinnatifid, the segments deeply and irregularly cut. Florets dull yellow, those of the disc tubular and perfect, of the ray with a very short ligule, and without stamens. Heads small, ovoid, forming a large terminal paniole. Plant aromatic.

Widely distributed, but not common.

I.—Manton; Clench; Pewsey; New Mill.

III.—Poulton; Mildenhall; Axford.

16. Tanacetum Linn.

1. T. Linn. *Tansy.*

Bab. 192. Hook. 203. Benth. 248.

Waysides. P. August to September.

Rootstock creeping. Stem two to three feet high, glabrous, leafy, generally simple. Leaves large, dark green, pinnate; the pinnæ long, narrow, pinnatifid; upper sessile, lower stalked. Florets dull yellow, outer ones generally ligulate, but not longer than the others. Whole plant strongly scented.

I.—Tan Coat Lane; borders of Savernake Forest; Clatford Park; Pewsey; Burbage.

II.—Savernake Forest.

IV.—Wick Farm.

17. Senecio Linn.

Leaves divided.

Ligulate florets wanting ... ... 1. vulgaris.

Ligules small and rolled back ... ... 2. sylvaticus.

Ligules conspicuous.

Fruit all glabrous ... ... 5. aquaticus.

Fruits of ray only glabrous ... ... 4. Jacobæa.

Fruits all hairy ... ... 3. erucifolius.

Leaves undivided ... ... 6. campestris.

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1. **S. vulgaris** Linn. *Groundsel.*

Bab. 193. Hook. 207. Benth. 254.

Cultivated and waste ground. A. All the year.

Stems, 6 to 12 inches high, branched, glabrous or cottony (not pubescent). Leaves pinnatifid, coarsely toothed. Heads in terminal corymbs. Occasionally, but very rarely, ligulate florets are present.

Abundant.

To be found in flower all the year.

2. **S. sylvaticus** Linn.

Bab. 193. Hook. 207. Benth. 255.

Gravelly places. A. June to September.

Similar in many respects to *S. vulgaris*, but generally taller (from 1 to 2 feet high), less succulent, and slightly covered all over with a scented glandular down. Leaves more deeply cut and corymbs more lax.

I. Pewsey; Downs between Huish and Alton.

IV. Overton (Long's Penning).

3. **S. erucifolius** Linn.

Bab. 194. Hook. 208. Benth. 256.

Chalky soils. P. July, August.

Rootstock shortly creeping. Stems from 1 to 2 or 3 feet high, simple, more or less cottony. Leaves pinnatifid, with linear segments, the edges often curled round, white underneath, the terminal lobe not very different from the rest. Heads in a dense corymb; all the fruits ribbed and hairy. Very similar in many respects to *S. Jacobæa*.

II. Bedwyn

4. **S. Jacobæa** Linn. *Ragwort.*

Bab. 194. Hook. 208. Benth. 256.

Pastures and waste ground. P. June to November.

Rootstock not creeping. Stems from 1 to 2 or 3 feet high, almost glabrous. Leaves pinnatifid, the lobes again often deeply and irregularly pinnatifid, glabrous or woolly underneath, terminal lobe larger than the rest. Heads in a dense corymb; fruits of the disc hairy, of the ray ribbed and glabrous. Abundant.

1865. June 14.	1870. May 28.
1866. not out June 29.	1871. May 17.
1867. ——	1872. May 24, June 2.
1868. coloured bud June 19.	1873. June 20.
1869. May 22.	1874. June 14, 29.

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5. S. aquaticus Huds. *Marsh Ragwort.*

Bab. 194. Hook. 208. Benth 255.

Marshy places. B. June to November.

Similar in many respects to *S. Jacobæa* The lower leaves have a much larger terminal lobe, the lateral ones being generally very small, or sometimes even wanting. The stem leaves are also less deeply divided. The heads contain fewer florets, and the fruits are all glabrous.

Common.

1865. June 4.	1872. Cold. bud June 24.
1867. June 16.	1873. June 8, 24.
1869. Not in flower June 6.	1874. June 30.
1870. June 6.	

These three species are very difficult to discriminate; the leaves vary considerably in shape, and it is impossible to give distinctive characteristics which will hold good universally. The most certain test is that of the fruit.

Besides these three *S. Squalidus* has also been introduced at Pewsey.

6. S. campestris D. C.

Bab. 195. Hook. 209. Benth. 257.

Chalky Downs. (P.) May, June.

Stem 6 to 8 inches high, simple, leafy, covered as well as the leaves with a copious white cottony down. Radical leaves ovate, shortly stalked, blunt, forming a rosette. Stem leaves lanceolate. Heads from 1—6 in number, large, rather pale yellow.

I.—Martinsell; Down opposite Marden, *Mr. T. Walker.*

III.—Rabley Down; Ogbourne Down.

IV.—Silbury Hill; Broad Hinton; "Bath Road."

1865. May 23 (at Stonehenge).	1870. May 20.
1866. Full bud May 31.	1872. May 14.
1867. May 13.	1874. May 19.
1868. May 31.	

18. Bidens Linn.

The two species are distinguished by their leaves, though this is not always a test.

Leaves undivided, sessile ... ... 2. cernua.

Leaves three cleft, stalked ... ... 1. tripartita.

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1. **B. tripartita** Linn. *Three-cleft Bur-marigold.*

Bab. 195. Hook. 199. Benth. 258.

Marshy places. A. Aug., Sept.

Stems from 1 to 3 feet high, branched in larger specimens. Leaves lanceolate coarsely serrate, stalked. Generally there are a pair of lobes at the base, thus forming a tripartite leaf, and the leaf-stalk is slightly winged. This wing, on the leaves about the middle of the stem, unites with that of the corresponding opposite leaf. Florets all tubular, outer bracts longer than the heads of flowers, which are solitary, terminal, and erect or slightly drooping. Fruit flattened with 2 (rarely 3) bristles, armed with reflexed prickles.

Sometimes the leaves are undivided, and at others there is an extra pair of lobes at the base.

Uncommon.

I.—New Mill.

III.—Axford.

IV.—Swindon Reservoir.

2. **B. cernua** Linn. *Bur-marigold.*

Bab. 195. Hook. 199. Benth. 258.

Marshy places. A. Aug., Sept.

Very similar to the last, but rather stouter and coarser. The leaves undivided, and sessile, with enlarged bases, which, in the middle of the stem, are slightly united to those of the corresponding opposite leaf. Florets tubular, rarely ligulate in the ray. Outer bracts larger than the heads, which are terminal, generally larger than in *B. tripartita*, and drooping. Fruit flattened, with three or four barbed bristles.

I.—New Mill; Pewsey; Marlborough (but only a casual).

II.—Pond in Savernake Forest.

III.—Axford.

19. Carlina Linn.

1. **C. vulgaris** Linn. *Carline Thistle.*

Bab. 196. Hook. 187 Benth. 266.

Chalky downs. B. July to Oct.

Stem from 2 to 12 inches high, simple or branched in its upper part (in larger specimens), purple and slightly clothed with cottony hairs. Leaves very prickly, lanceolate at the top of the stem, but becoming longer and narrower near the roots, covered with long cottony hairs, especially when

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young and on the under sides. Florets yellow, all tubular in large terminal heads. Inner bracts long and ligulate, and coloured yellow, so as to present the appearance of a ray. Outer bracts very prickly, cottony.

Widely spread over the Downs, but not very common.

20. Arctium Linn.

Well distinguished by the hooked bracts to the flower heads, and the large coarse leaves, often 1 foot across, white underneath from a mass of down, which occasionally spreads slightly but loosely over the upper surface. But though the genus is easily known, the species are not. Bentham unites all under one, *Lappa*, but this is insufficient for the purposes of a Flora. A very important character consists in the leaf-stalk of the *lower* (not upper) leaves; in *A. majus*, this is solid, in all the other species it is hollow. But besides this the shape of the stalk is an important feature. In *A. majus* the stalk has a deep channel along its upper surface and prominent angles elsewhere; those of the other species are not nearly so deeply furrowed (varying in the species), and the channel along the upper surface is also modified. These characters, in connection with the character of the inflorescence, are generally sufficient to determine the species, the great difficulty is when the root-leaves are wanting and the plant otherwise damaged, a very common occurrence as the plant grows where it is liable to all sorts of injuries.

Stalks of root-leaves solid... ... ... 1. majus.
Stalks of root-leaves hollow.
Heads on rather long stalks lowermost longest ... 4. intermedium.
Heads on short stalks, scattered ... ... 3. minus.
Heads almost sessile, 3 usually close together at the end of each branch... ... ... 2. nemorosum.

I have followed Babington entirely in the description of the species.

1. A. majus Schk.

Bab. 196. Hook. 187. (A. Lappa). Benth. 259. (A. Lappa).

Waste places. B. August.

Stems 3 to 4 feet high. Stalks of lower leaves solid, deeply furrowed along the upper side, and with prominent angles. Heads large, on long stalks, forming corymbs at the ends of the branches. Involucre as long as or longer than the florets.

As yet I have only detected this plant at Axford.

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2. **A. nemorosum** Lej.

Bab. 197. Hook. 187. Benth. 259. (A. Lappa).

Waste places. B. Aug., Sept.

Stem 2 to 4 feet high. Stalks of lower leaves hollow, "nearly flat above, rather angular." Heads rather large, "nearly all sessile, three usually placed close together at the end of each branch," the whole approaching the form of a raceme. Involucre as long as or longer than the florets.

Apparently not uncommon. I have specimens from Axford, Poulton, Martinsell and the West Woods.

3. **A. minus** Schk.

Bab. 197. Hook. 187. Benth. 259. (A. Lappa).

Waste places. B. August to October.

Stems 2 to 4 feet high, the central stem generally nodding. Stalks of lower leaves hollow, nearly round, scarcely furrowed. Heads small, shortly stalked, scattered along the branches. Involucre shorter than the florets.

I have never observed this plant, but in a collection of plants presented to the Society by Miss Meyrick is an undoubted specimen from the Wilderness, Ramsbury Manor.

4. **A. intermedium** Lange.

Bab. 197. Hook. 187. Benth. 259. (A. Lappa).

Waste places. B. Aug., Sept.

Stems about 3 feet high. Stalks of lower leaves hollow, slightly furrowed. Heads usually with much wool, on long stalks, those of the lower heads longest. Involucre equalling the florets.

Not uncommon. I have specimens from Chisledon, Overton, and West Woods.

21. Serratula Linn.

1. **S. tinctoria** Linn. *Saw-wort.*

Bab. 198. Hook. 190. Benth. 260.

Woods and bushy places. P. June to October.

Stem stiff, erect, about two feet high, simple or branched in its upper part. Leaves very variable, even on the same plant, from lanceolate to pinnate, all sharply serrate. Lower leaves on long stalks upper sessile.

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When the leaves are lanceolate, there are generally (and invariably on the stem leaves) one or more narrow lobes at the base, so that the leaf may even then be said to be pinnatifid, but in all cases the terminal lobe is the largest. Florets tubular, purple, perfect or dicecious. Anthers of male flowers blue, of the female white. Heads rather small, resembling thistles, arranged in a terminal corymb.

I.—Manton; Pewsey.

III.—Mildenhall.

IV.—Marlborough Common; Avebury; Overton.

22. Centaurea Linn.

Leaves deeply pinnatifid ... ... 3. Scabiosa.
Leaves entire.
Leaves lanceolate, flowers purple ... ... 1. nigra.
Leaves linear, outer flowers bright blue ... ... 2. Cyanus.

1. C. nigra Linn. *Black Knapweed.*

Bab. 198. Hook. 188. Benth. 267.
Meadows and hedges. P. June to November.

Stems rigid, from one to two feet high, branched, thickened under the heads. Uppermost leaves sessile, narrow, but becoming broader and stalked towards the root, more or less irregularly dentate. Florets purple, all tubular and perfect (outer ones rarely enlarged and neuter) in rather large terminal heads. Bracts with a broad, black, deeply fringed appendage, so arranged that the appendages alone are visible.

Common. White varieties have been found at Martinsell and Lockeridge.

1865.	June 7.	1870.	June 11.
1866.	Bud June 11.	1871.	June 24.
1867.	——	1872.	June 21.
1868.	——	1873.	June 24.
1869.	June 10.	1874.	June 12.

2. C. Cyanus Linn. *Corn Blue-bottle.*

Bab. 199. Hook. 189. Benth. 267.
Corn-fields. A. June to November.

Stems slender, erect, branched, covered with loose cottony hairs. Leaves long and narrow, slightly cottony above, densely cottony beneath. Inner florets tubular, perfect, purple, outer much larger, bright blue and neuter. Bracts with a narrow dark deeply toothed border. Heads rather large, terminal.

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Not common. Does not occur near Marlborough.

I.—About Pewsey and Oare, on the Green-sand.

III.—Ramsbury.

3. C. Scabiosa Linn. *Great Knapweed. Matfellon.*

Bab. 199. Hook. 189. Benth. 267.

Fields and hedges. P. June to November.

Stem from two to three feet high, stout, rigid, much branched. Leaves pinnatifid, roughish. Inner florets purple, tubular, perfect; outer much larger and neuter. Heads large, terminal. Bracts green, with a black fringed triangular appendage at the top, so arranged that the green centres of the bracts are exposed.

Common. A white variety has been found at Axford.

1865.	June 7.	1870.	June 9.
1866.	June 8.	1871.	Bud May 19.
1867.	Bud June 10.	1872.	June 23.
1868.	June 5.	1873.	June 12, 28.
1869.	June 10.	1874.	June 12.

23. Onopordum Linn.

1. O. Acanthium Linn. *Cotton Thistle.*

Bab. 200. [Hook. 194 Benth. 265.

Waste ground. B. August.

Stem erect, stout, 4 or 5 feet high, covered, as well as the leaves, with a dense cottony down. Leaves large oblong, sinuate, and spinous, decurrent. Heads large, terminal; flowers purple.

First years' plants have been found at New Mill, but as they had all disappeared the next year, it is possible that the species was but a casual there.

24. Carduus Linn.

Herbs generally with hard stems and prickly leaves and bracts. The leaves in some of the species are decurrent, *i.e.*, the blade of the leaf (which is sessile) is prolonged down each side of the stem, which in these species also becomes prickly. The pappus is composed of either simple or feathery hairs, whence the older botanists used to divide this genus into two—the True Thistles

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with the pappus of simple hairs, and the Plume Thistles, with the pappus of feathery hairs.

Many anomalous specimens occur, especially among the Plume Thistles, which are believed to be only hybrids.

All the British species (except two) are found about Marlborough; of these *C. tuberosus* is especially a Wiltshire plant, not occurring elsewhere in England.

Hairs of pappus simple.
- Wings of stem interrupted, bracts lanceolate ... 1. nutans.
- Wings of stem continuous, bracts very narrow ... 2. crispus.

Hairs of pappus feathery.
- Leaves with hair-like spines on upper surface.
  - Leaves decurrent ... ... 3. lanceolatus.
  - Leaves not decurrent ... ... 4. eriophorus.
- Leaves hairy or pubescent above.
  - Stem branched, leafy; leaves rigid, with stiff spines.
    - Leaves much decurrent, flowers dark purple 6. palustris.
    - Leaves not decurrent (or very slightly so) flowers pale purple ... ... 5. arvensis.
  - Stem wanting, or if present branched... ... 9. acaulis.
  - Stem simple. Leaves soft, with few spines.
    - Leaves deeply pinnatifid ... ... 8. tuberosus.
    - Leaves entire or lobed, not deeply pinnatifid 7. pratensis.

1. C. nutans Linn. *Musk Thistle.*

Bab. 200. Hook. 190. Benth. 262.

Waste ground. B. June to Nov.

Stem 2 to 3 feet high, furrowed, cottony, winged. Leaves long waved very prickly. Heads large, solitary, nodding, on long stalks, which are winged below, but always naked for a certain distance below the heads. Bracts very stiff and spreading, each terminating in a sharp point.

Common.

1865.	About June 5.	1870.	June 12.
1866.	——	1871.	——
1867.	June 8.	1872.	Ap. 9, 30.
1868.	May 19.	1873.	June 7.
1869.	Ap. 27.	1874.	May 12, June 12.

2. C. crispus Linn. *Welted Thistle.*

Bab. 201. Hook. 191. Benth 262. (C. acanthoides).

Hedges and waste places. B. May to Nov.

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Stem 1 to 3 feet high, winged, cottony in its upper part. Leaves deeply pinnatifid, spinous, cottony beneath. Heads smallish and crowded at the ends of the stems, or large and solitary (when it is the variety *acanthoides*). Bracts very narrow, erect. Stalks winged to the summit.

Common.

1865.	May 20.	1870.	May 15.
1866.	May 21.	1871.	May 17.
1867.	May 27.	1872.	May 20.
1868.	May 19.	1873.	May 25.
1869.	May 2.	1874.	May 12.

3. C. lanceolatus Linn. *Spear Thistle.*

Bab. 201. Hook. 191. Benth. 263.

Hedges and waste ground. B. July to November.

Stems three to four feet high, furrowed, hairy, winged, branched. Leaves pinnatifid, each segment terminated by a strong spine, white and cottony beneath. Heads large, terminal, solitary, or two or three together. Bracts, lanceolate, spinous, spreading.

Very Common.

4. C. eriophorus Linn. *Woolly-headed Thistle.*

Bab. 201. Hook. 191. Benth. 264.

Waste ground. B. July, August.

Stem three to four feet high, furrowed, hairy, branched, not winged. Leaves white and cottony beneath, deeply pinnatifid, each lobe ending in a strong spine and alternately pointing upwards and downwards. Heads very large, terminal (rarely in pairs). Bracts lanceolate, spinous, spreading; the whole involucre densely clothed with white cottony hairs, so as to make the plant very conspicuous.

Scarce.

I.—Chalk pit on the Pewsey Road, about a mile from Marlborough. Pewsey Downs.

II.—Burbage.

III.—Axford.

5. C. arvensis Curt. *Creeping Thistle.*

Bab. 201. Hook. 192. Benth. 263.

Fields and Hedges. P. July to October.

Rootstock extensively creeping. Stems annual, one to three feet high, much branched, more or less cottony, rarely glabrous. Leaves pinnatifid, spinous, wavy, lower ones stalked, upper ones sessile, sometimes slightly

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decurrent, or partially embracing the stem; very variable in breadth. Florets pale purple, male and female on different plants. Heads small, in loose terminal corymbs. Bracts pressed close to the head, with small spreading prickly points.

Common.

1865.	June 10 (?)	1870.	June 23.
1866.	——	1871.	——
1867.	——	1872.	June 11.
1868.	——	1873.	July 10.
1869.	Not in flower, June 20	1874.	July 4.

6. C. palustris Linn. *Marsh Thistle.*

Bab. 202. Hook. 192. Benth. 263.

Wet meadows and woods. B. May to October.

Stem solitary, erect, three to five feet high, covered with wavy spinous wings, slightly branched at the top. Leaves long pinnatifid, wavy, very spinous, usually cottony underneath, upper ones very narrow, but increasing in breadth towards the root. Florets dark purple or white. Heads small, in a terminal cluster. Bracts pressed close to the head, with small prickly points.

When the stem has been cut down, the lateral buds develop into branches, sometimes of considerable length, and it then bears some resemblance to *C. crispus*. The feathery pappus and close-pressed bracts will serve as distinguishing marks.

Common.

1865.	May 30.	1870.	May 22.
1866.	June 13.	1871.	May 26.
1867.	June 8.	1872.	May 24.
1868.	May 23.	1873.	June 2.
1869.	May 27.	1874.	May 31.

7. C. pratensis Huds.

Bab. 202. Hook. 192. Benth. 264.

Boggy meadows. P. June to August.

Rootstock shortly creeping. Stem one to two feet high, hoary, simple, naked in its upper part, and terminated by a single head of flowers, rarely with one or two branches, each similarly single-headed. Leaves mostly radical, broad, soft, undivided, white and cottony beneath, fringed with small but unequal prickles; rarely with small cut lobes, but even then not pinnatifid. Heads rather large. Bracts pressed close to the head, each terminated with a very weak prickle.

Has only been detected at Chisledon.

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8. C. tuberosus Linn.

Bab. 202. Hook. 193. Benth. 264.

Copses. P. August, September.

Similar in many points to the last, of which Bentham considers it may be but a variety.

Rootstock not creeping. Roots tuberous. Leaves deeply twice or thrice pinnatifid, not so cottony beneath as those of *C. pratensis*.

Said to occur at Avebury, but I have not been able to find it. It grows in woods, and does not show itself unless the wood is cut down; hence it may be years before it would be seen.

9. C. acaulis Linn. *Ground Thistle.*

Bab. 202. Hook. 192. Benth. 265.

Dry pastures. P. June to October.

Stem very short, generally wanting, but in moist situations sometimes as much as a foot high, slightly branched and woolly. Leaves rigid, glabrous, pinnatifid, spinous, stalked. Heads solitary rather large. Bracts pressed close to the head, ciliated on the margin, and terminated by a small weak spine.

Very common.

1865. June 11.	1871. June 25.
1868. June 11.	1873. July 9.
1869. Not in flower, June 20.	1874. June 30.
1870. June 23.	

25. Lapsana Linn.

1. L. communis Linn. *Nipplewort.*

Bab. 203. Hook. 209. Benth. 283.

Waste and cultivated land. A. June to November.

Stem six inches to two feet high, branched, hairy below, glabrous or with scattered hairs in its upper part. Leaves variable, hairy, lower ones broadly ovate and coarsely toothed, upper ones narrow and entire. Root leaves with a large terminal lobe, and some smaller lateral ones. Heads small, in a loose corymb. Stalks slender. Fruit without any pappus.

Very common.

1865. June 15.	1870. June 11.
1866. June 28.	1871. June 25.
1867. June 24.	1872. June 22.
1868. June 19.	1873. June 22.
1869. June 4.	1874. June 6, 12.

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26. Cichorium Linn.

1. C. Intybus Linn. *Succory. Chicory.*

Bab. 204. Hook. 210. Benth. 282.

Waste places. P. June to Oct.

Root large, fleshy. Stem 1 to 3 feet high, rigid, rough, with numerous spreading branches. Lower leaves rather like those of the Dandelion, with deep lobes, upper leaves broadly lanceolate, sessile, embracing the stem, strongly fringed, and with a few glandular hairs on the under surface. Heads large, sessile in twos or threes. Flowers bright blue. Scarce, probably only a casual near Marlborough, as it is never found for more than two years in the same locality.

I.—Hedge near Granham Farm. Pewsey Down.

III.—Near Ogbourne St. Andrew.

IV.—Waste ground in the School field.

27. Hypochœris Linn.

1. H. radicata Linn. *Long-rooted Cat's-ear.*

Bab. 204. Hook. 211. Benth. 272.

Meadows and waste places. P. May to Nov.

Stems several, leafless, from 1 to 2 feet high, hairy below, but glabrous above, generally with a few ascending branches, scaly in the upper part, and slightly thickened under the large terminal heads. Leaves all radical, spreading, more or less pinnately lobed and covered on both sides with stiff hairs. Fruit contracted into a long slender peak.

Common.

1865. May 23.	1870. May 18.
1866. June 3	1871. May 9 (Pewsey).
1867. June 16.	1872. April 30, May 9.
1868. May 13.	1873. May 13.
1869. May 7.	1874. May 31.

28. Thrincia Roth.

1. T. hirta D.C.

Bab. 205. Hook. 213. (Leontodon) Benth. 271. (Leontodon).

Dry Pastures. B. or P. June to Sept.

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Stems 4 to 8 inches high, numerous, rarely branched, hairy below, without leaves or scales, and very slightly thickened beneath the heads. Leaves all radical, rough, variable in shape from oblong to slightly pinnatifid. Heads small, drooping before flowering, afterwards erect; bracts glabrous, ciliate on the edges and back.

Apparently not uncommon, but until lately overlooked.

29. Leontodon Linn.

Hairy, stems simple, without scales and but slightly thickened at the top ... ... 1. hispidum.

Glabrous, stems branched and scaly, and much thickened at the top ... ... 2. autumnale.

1. L. hispidum Linn. *Rough Hawkbit.*

Bab. 205. Hook. 213. Benth. 270.

Meadows. P. May to Nov.

Leaves all radical, hairy, coarsely toothed or pinnatifid. Stems 6 inches to one foot or more high, hairy with stiff hairs, especially at the top, without scales, except occasionally one or two just under the heads; heads large, solitary, drooping before flowering. Pappus with an outer row of stiff short hairs.

Common.

1865. May 28.	1870. May 18.
1866. May 29.	1871. May 12.
1867. June 2.	1872. May 20.
1868. May 19.	1873. June 10.
1869. May 17.	1874. May 26.

2. L. autumanale Linn. *Autumnal Hawkbit.*

Bab. 205. Hook. 213. Benth. 271.

Meadows and roadsides. P. July to Nov. or Dec.

Leaves all radical, glabrous, with a few hairs, long, narrow, and more or less deeply pinnatifid. Stems 6 to 12 inches high, glabrous, generally branched, with numerous scales, especially near the top, where it is much thickened. Heads terminal, not large.

Very common.

1870. June 6.
1873. June 12.
1874. June 12.

Rarely out before July.

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30. Tragopogon Linn.

The two species are by many united. They are very similar in structure, and are known by the comparative lengths of the florets and bracts.

Florets equal in length to the bracts ... ... 2. pratensis.
Florets half as long as the bracts. ... ... 1. minor.

1. T. minor Fries. *Goat's-beard.*

Bab. 205. Hook. 212. Benth. 269. (T. pratensis.)

Meadows and banks. B? May to Oct.

Root long, tapering. Stems glabrous from one to two feet high, branched. Leaves long and narrow, glabrous, those of the stem much expanded at the base, and almost sheathing the stem. Heads large, only opening in the sun, and said to close at noon, though they also close in dull weather, hence the plant from its grass-like leaves is often overlooked.

Probably generally distributed.

1865.	June 8.	1870.	May 28.
1866.	June 7.	1871.	May 28.
1867.	June 5. ?	1872.	May 20.
1868.	May 20.	1873.	May 17.
1869.	May 11.	1874.	May 3.

2. T. pratensis Linn.

Bab. 206. Hook. 212. Benth 269.

Meadows. B? May to Oct.

Very similar in appearance to the last, but smaller and more branched; the florets equal to, or rather longer than the bracts, and anthers yellow, not dark brown.

Found near Pewsey by Rev. J. Sowerby.

31. Picris Linn.

1. P. hieracioides Linn.

Bab. 206. Hook. 212. Benth. 270.

Pastures and dry banks B. July to Nov.

Stem 1 to 3 feet high, rough with coarse hooked hairs, corymbosely branched above, slightly thickened beneath the heads of flowers. Leaves long and narrow, rough, more or less wavy or dentate on the edges; upper ones sessile, lower narrowed into long stalks. Heads moderate (1 inch in

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diameter), terminating the branches, which are furnished with a few scattered bracts.

Not common, but more so than would appear from the list of localities.

I.—Martinsell.

II.—Savernake; Bedwyn.

IV.—Ogbourne; Row Down.

32. Helminthia Juss.

1. H. echioides Gaert. *Ox-tongue.*

Bab. 206. Hook. 211. Benth. 269.

Edges of fields and banks. A. or B. July to Sept.

Stems, stout, erect, rough, 2 to 3 feet high, much branched. Leaves lanceolate, lower ones long and stalked, the upper broader and sessile, all covered with stiff hairs, springing from a white swollen base, and furnished at the top with 3 small hooks. Heads rather small, outer bracts (3 or 5 in number), broad and bristly like the leaves.

Very uncommon.

Chisledon. A specimen has been brought to me from "Martinsell," but I have never been able to find the spot.

33. Lactuca Linn.

1. L. virosa Linn. *Acrid Lettuce.*

Bab. 207. Hook. 214. Benth. 273.

(L. scariola).

Dry Banks. B. July to September.

Stem 2 to 4 feet high, rough, branched above. Leaves ovate, sessile, with large auricles, edges and midrib with stiff bristles. "Radical leaves narrowed into an indistinct winged petiole." Heads small, scattered, with numerous heart-shaped acute bracts.

Found near the Railway Station, in 1871 by Rev. J. Milner, but has disappeared.

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34. Taraxacum Juss.

1. T. officinale. Wigg. *Dandelion.*

Bab. 207. Hook. 215. Benth. 276.
(T. Dens-leonis).

Fields and waste places. P. All the year.

Leaves all radical, stalked, ovate, either entire or more or less deeply lobed, the lobes pointing downwards. Stalks one inch to one foot high, hollow; terminating in a large head of flowers; outer bracts bent back; inner longer, and either simple or with a small strap-shaped appendage below the tip. This latter form has the leaves much more deeply divided and is considered a distinct variety under the name *erythrospermum*.

Abundant—The var. erythrospermum is not uncommon on the Downs.

35. Sonchus Linn.

Stem simple, flowers large, golden yellow	3. arvensis.
Stem much branched, flowers small, pale yellow.	
Auricles of leaves arrowshaped	1. oleraceus.
Auricles of leaves rounded	2. asper.

1. S. oleraceus Linn. *Sow-thistle.*

Bab. 208. Hook. 218. Benth. 275.

Cultivated land. A. May to Nov.

Stem 1 to 3 feet high, glabrous, much branched. Leaves very variable, undivided, or more or less lobed, generally flat, with the edges sharply dentate; the stem leaves acute, sessile, with the auricles at the base projecting, so as to make the leaf truly arrow-shaped. Heads of flowers small, pale yellow; fruit ribbed, and the spaces between the ribs wrinkled.

This species (which is generally united with the next) appears with us to flower much later in the year than *S. asper*, and as we were away from Marlborough during July and August, it escaped notice. Hence till within the last few years, I considered it to be rather a scarce plant. It appears to be commoner than I imagined, but is far scarcer than *S. asper*.

1872. May 12.
1873. June 12.
1874. June 12.

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2. S. asper Hoffm. *Prickly Sow-thistle.*

Bab. 208. Hook. 218. Benth. 275. (S. oleraceus).

Cultivated land. A. May to Dec.

Very similar to the last, but is altogether a coarser plant, the leaves may be said to be edged with prickles, and the auricles at the base are turned round and placed close against the stem. The fruit is ribbed, but smooth between the ribs.

Very common.

1865.	May 28.	1870.	June 5.
1866.	May 29.	1871.	May 26.
1867.	June 7.	1872.	May 12.
1868.	May 16.	1873.	May 22.
1869.	April 13.	1874.	May 15.

3. S. arvensis Linn. *Corn Sow-thistle.*

Bab. 208. Hook. 217. Benth. 274.

Fields and waste places. P. July to October.

Rootstock creeping. Stems two to four feet high, or even higher, simple, leafy below, but naked in the upper part, where it is covered with glandular hairs. Leaves long narrow, generally lobed (the lobes pointing downwards) and sharply toothed. Upper leaves sessile and undivided. Heads large, few, in a loose corymb at the end of the stem. Involucre covered with glandular hairs.

Not very common, but generally distributed.

36. Crepis Linn.

The two species, which have been found about Marlborough, may be thus distinguished.

Plant glabrous (or nearly so), stem leaves sagittate ... 1. virens.

Plant hairy, stem leaves not sagittate ... ... 2. biennis.

1. C. virens Linn. *Smooth Hawk's-beard.*

Bab. 209. Hook. 215. Benth. 277.

Fields and waste places. A. May to December.

Extremely variable. Stems either solitary, about two to three feet high, or several and but six inches or one foot high. Leaves, as well as the stem, glabrous, or with but few hairs. Lower leaves either entire or deeply

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cut, with a large terminal lobe, and broad or narrow lateral ones. Upper leaves narrow and undivided, and with two long pointed auricles. Heads of flowers small, in loose panicles. Variable as the plant is, it is very distinct, the small heads (smaller than in any other similar plant except *Lapsana*) is a very distinctive character. Its glabrous stems and leaves, and the slender flower stalks also help to distinguish it.

1865.	May 23.	1870.	May 12.
1866.	June 8.	1871.	May 26.
1867.	June 7.	1872.	April 30, May 12.
1868.	May 14.	1873.	June 2.
1869.	May 5, 15.	1874.	May 25.

2. C. biennis Linn.

Bab. 210. Hook. 216. Benth. 278.

Pastures. B. June, July.

Stems one to four feet high, rough, furrowed, branched in the upper part. Leaves irregularly pinnatifid, rough, extending half way up the stem. Uppermost leaves narrow, lanceolate, dentate at the base, clasping the stem, but not sagittate. Heads about one inch across in a terminal corymb.

Approaches very nearly to the larger forms of *C. virens*, from which it may be distinguished by its hairy stem and leaves; the stem leaves not sagittate at the base, its larger heads of flowers and its bracts downy on the inside (not glabrous as in *C. virens*).

Found in 1868 at Mildenhall, but evidently a casual, as it has not been found since.

37. Hieracium Linn.

An extensive and very difficult genus, of which only four species occur near Marlborough.

Flower stalks solitary, leafless, stem with creeping shoots 1. Pilosella.

Flower stems with more than one head.

Radical leaves present at time of flowering.

Radical leaves cordate at the base ... ... 2. murorum.

Radical leaves lanceolate ... ... 3. vulgatum.

No radical leaves at time of flowering.

Stem leafy ... ... 4. boreale.

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1. H. Pilosella Linn. *Mouse-ear Hawk Weed.*

Bab. 210. Hook. 219. Benth. 280.

Dry banks. P. May to October.

Stem with creeping prostrate shoots. Leaves lanceolate, entire, hairy, white beneath. Stem leafless from two to twelve inches high, terminated by a head of lemon coloured flowers.

Common.

1865.	May 21.	1870.	April 22, May 16.
1866.	May 22.	1871.	May 12.
1867.	June 8.	1872.	May 5.
1868.	May 16.	1873.	May 13.
1869.	May 6.	1874.	May 5.

2. H. murorum Linn.

Bab. 216. Hook. 221. Benth. 280.

Woods. P. June.

Radical leaves present at the time of flowering, long stalked, ovate or often cordate, dentate. Stem leaves wanting, or very few, stalked, and placed high on the stem, which is from twelve to eighteen inches high. Heads in a loose terminal corymb.

At present has only been detected at Martinsell.

3. H. vulgatum Fries.

Bab. 217. Hook. 222. Benth. 280. (H. murorum).

Woods. P. June to September.

Root leaves lanceolate, narrowed into a short peticle, more or less dentate. Stem leaves dentate, stalked, uppermost sessile. Stem 12 to 18 inches high, hardly leafy. Heads in a terminal corymb.

Not uncommon.

I.—Martinsell; Bedwyn.

II.—Savernake.

III.—Mildenhall Borders.

4. H. boreale Fries.

Bab. 220. Hook. 223. Benth. 282. (H. subaudum).

Banks. P. June to October.

Root leaves none at time of flowering. Stem from two to four feet high, *leafy*, very hairy below, downy above. Leaves sessile, dentate;

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upper ones broad at the base, lower ones much narrowed below, but not stalked. Heads many in leafy bracteate corymbs. Stalks with long hairs. Involucre blackish green, nearly glabrous.

I.—West Woods; Copse near Granham Farm; New Mill; Pewsey; Wan's Dyke, near Pewsey Road.

II.—Savernake; Ivy's Farm.

III.—Rabley; Mildenhall.

IV.—Chisledon.

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